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THE SOUNDS OF ENGLISH

AN INTRODUCTION TO PHONETICS

BY

HENRY SWEET, M.A.

UNIVERSITY READER IN PHONETICS, OXFORD

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JANUARY 14, 1933

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PUBLISHER TO THE UNIVERSITY OF OXFORD

LONDON, EDINBURGH

NEW YORK AND TORONTO

PREFACE

THE object of this work is sufficiently shown in its title.

It differs from my *Primer of Phonetics* (§ 367)—to which it will serve as an introduction—not only in being more elementary, more systematically graduated, and more definitely based on the English sound-system, but in being better adapted for self-instruction in other respects as well. I hope it will be found specially useful to those who have to teach phonetics in connexion with elocution and modern languages.

In order to make the book as generally useful as possible, I have also dealt briefly with the applications of phonetics to historical and comparative philology, as well as to the more practical sides of the study of language; and have added a bibliography to serve as a first guide to the beginner in his further progress, and to guard him against one-sidedness as well as uncritical assimilation of the latest views merely because they are new.

This book is the outcome of an exceptionally long and varied experience as learner and teacher of phonetics. In early youth I enjoyed the inestimable privilege of being a pupil of A. M. Bell, the author of *Visible Speech*, and of personally discussing phonetic questions

with such authorities as A. J. Ellis, Prince L. L. Bonaparte, J. Storm, and afterwards E. Sievers, together with many others—in fact, with nearly all the pioneers of modern phonetics.

The impetus given to the study of phonetics by the new regulation of the Board of Education has brought with it two inevitable drawbacks. Many teachers who used to profess not to know what phonetics was, forthwith announced classes in it. And then came a flood of worthless publications on phonetics—most of them uncritical compilations from foreign works unsuited for English needs.

I have, therefore, in conclusion, to express the hope that our educational authorities will be cautious in introducing phonetics and appointing teachers of it—and that they will profit by the experience of Scotland.

H. S.

OXFORD, *October*, 1907.

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CONTRACTIONS

Am. = American.	N. = North(ern).
E. = English.	occ. = occasional.
F. = French.	S. = South(ern).
G. = German.	Sc. = Scotch.
Ir. = Irish.	St. = Standard.
It. = Italian.	W. = West(ern).

SPOKEN ENGLISH

1. No language is perfectly uniform over the whole of its area. Just as languages differ from each other in phonetic structure—in their sounds and pronunciation—so also dialects of the same language differ from each other more or less. Thus the sound-system of Lowland Scotch, which was originally a mere variety of Northern English, differs considerably from that of Standard English.

2. Standard English itself was originally that mixture of the Midland and Southern dialects which was spoken in London during the Middle Ages, just as Standard French is the dialect of that district of which Paris is the centre.

3. Standard English, like Standard French, is now a class-dialect more than a local dialect: it is the language of the educated all over Great Britain. But although it has, to a great extent, supplanted the local dialects, it is still liable to be influenced by them; each speaker imports into it something of his own local form of speech, whether it be a rustic dialect or the vulgar cockney of London, Liverpool, or any other large town. The best speakers of Standard English are those whose pronunciation, and language generally, least betray their locality.

4. English, like all living languages, changes from generation to generation: slight and imperceptible as the differences in the pronunciation of father and son may appear to be, there is always some change under ordinary normal conditions. Hence pronunciations which are vulgar in one century may become fashionable in the next, sounds which are distinct in one generation may be confounded in another, and new distinctions may be made, new sounds may arise.

5. A spoken language is, therefore, a vague and floating entity. As regards English, the very fixity of its written form gives all the freer play to the manifold influences which cause change.

6. A standard spoken language is, strictly speaking, an abstraction. No two speakers of Standard English pronounce exactly alike. And yet they all have something in common in almost every sound they utter. There are some peculiarities of pronunciation which pass unnoticed, while others, less considerable perhaps in themselves, are at once felt as archaisms, vulgarisms, provincialisms, or affectations, as the case may be, by the majority of educated speakers

SOUND-NOTATION

7. The traditional or 'nomic' orthography of English, as of most languages, is only imperfectly phonetic. The divergence between sound and symbol which makes English spelling unphonetic is in most cases the result of the retention of phonetic spellings after they had become unphonetic through changes in the pronunciation of the words which they represent. Thus such spellings as *knight* and *wright* were still phonetic in the time of Chaucer; for in the Late Middle English of the fourteenth century the initial consonants of these words were still pronounced, and the *gh* still had the sound of *ch* in German *ich*. So also we write *see* and *sea* differently, not for the sake of making an arbitrary distinction, but because they were pronounced differently till within the last few centuries, as they still are in the English spoken in Ireland.

8. In dealing with the sounds of English it becomes necessary therefore to adopt a phonetic notation. It is now generally agreed that the best way of constructing such a notation is to give the letters of the Roman alphabet the sounds they had in the later Latin pronunciation, with, of course, such modifications as seem to be improvements or otherwise desirable, supplementing the defects of the Roman alphabet by adding new letters when required. This is the 'Romic' or international basis.

9. This basis may be used to construct either a 'broad' or a 'narrow' system of notation. A broad notation is one which makes only the practically necessary distinctions of sound in each language, and makes them in the simplest manner possible, omitting all that is superfluous. Letters and

words in Broad Romic are enclosed in (), when necessary to prevent confusion with the nomic spelling. Thus in English Broad Romic we distinguish the present pronunciation of *knight* and that which it had in the time of Chaucer as *nait* and *kniȝt*. But these spellings, though accurate, are not minutely accurate. Thus *ai* is the symbol of any diphthong beginning with a vowel resembling the 'Italian *a*' in *father*, and ending in an approximation to the *i* of *it*. Of course, if the *a* is definitely broadened into *o* or thinned into the *æ* of *man*, then we write it *oi* or *sei*, as the case may be. But minuter shades of vowel-pronunciation can be disregarded for ordinary purposes, just as in writing *nait* we do not generally consider it necessary to show that the two consonants are formed on the gums, and not on the teeth, as in French.

10. But in comparing the sounds of a variety of languages, or dialects of a language, and still more in dealing with sounds in general, we require a 'narrow', that is, a minutely accurate notation covering the whole field of possible sounds. Such a Narrow Romic notation, in which each symbol has a fixed, definite value, serves as a key to the exact pronunciation of the vaguer symbols of the Broad Romic notations of each language. Narrow Romic are distinguished from Broad Romic symbols by being enclosed in []. Thus *i* (i) = [i] means that the vowel in *finny* is 'wide', not 'narrow' as in the French [i] in *fini*. In the Broad Romic notations of both languages *fini* is written for *finny* and *fini* alike. So also the English and French *n*'s are in Narrow Romic distinguished as [n·] and [n·] respectively. Such distinctions may, of course, be introduced into the Broad Romic notation of any language when there is any practical advantage to be gained thereby.

The 'International Alphabet' of *Le Maître Phonétique*, the organ of the International Phonetic Association of Paris, is based on the English romic systems. It is a compromise between a broad and

a narrow notation, being an attempt to make a special adaptation of the romic principle to the needs of French into a general notation for all languages.

11. The following is a convenient preliminary classification of the vowels of Standard English, with key-words :—

ʊ : up	o : sofa	i : it	e : men	æ : man	u : pull	o : not
aa : baa	ee : sir	ii : see	ei : vein		uu : pool	ou : soul,
						o : nought
ai : aisle, au : Faust						oi : oil
aie : fire, aue : our	ie : ear	ee : air		ue : poor	oie : joyous,	oe : ore

Here the vowels are in four rows: (1) normally short and monophthongic, (2) long, or half-diphthongic, (3) fully diphthongic, (4) murmur diphthongs. Those under (1) are often lengthened, but they always remain absolutely monophthongic. The only one in the next row that is always strictly monophthongic is *ee*; all the others, as we shall see afterwards, tend to become more or less diphthongic, especially in the pronunciation of the South of England, being often exaggerated into full diphthongs of the *ai*- and *au*-type in vulgar speech. *aie*, *aue*, *oie* are, strictly speaking, triphthongs, which in slow speech are disyllabic.

12. As regards the script forms of the phonetic symbols, *æ* should always be written thus, not in its italic form, which is liable to be confused with *œ*. *ɐ* is written *ɐ*—an inverted italic or script *a*, in which form it is easily joined to other letters.

13. The following are the consonants of Standard English :—

j	r ; ʃ, ʒ	s, z ; ʃ, ʒ	wh, w ; f, v
	l		
k, g	t, d	p, b	
ŋ	n	m	

For the aspirate *h* see § 169.

The only consonant-symbols that require explanation are η , as in *ink* in^k , j , as in *you*, β , as in *thin*, θ , as in *then*, \int , as in *she*, g , as in *measure*.

14. In naming the consonant-sounds, as distinguished from the letters by which they are denoted, it is often simplest to take the lengthened sound itself as the name, as with the vowels. But this is often inconvenient, and cannot be done at all with k , t , p . In such cases the consonant-name is formed by adding (ə): $k\text{ə}$, $b\text{ə}$, $w\text{ə}$, $\eta\text{ə}$ or $\eta\eta$. In writing, β is simply a looped-up p , θ may be written without the cross-stroke as a d with a back-sloping loop, \int with two loops, g as a z descending below the line, z itself being always written small.

15. When sounds are symbolized, not isolated, but joined together in words and sentences, it is often necessary to add marks to show the quantity or length, the stress (comparative force or loudness), and intonation (comparative pitch or height) of sounds and syllables.

16. In English Broad Romic it is only necessary to distinguish *long* from *short* vowels by doubling the former. ə is not doubled because it does not occur short. Repeated vowels can be distinguished from long ones by inserting a hyphen, as in hæpi-ist *happiest*. For minuter distinctions of quantity see § 145.

17. In English it is necessary to distinguish four degrees of stress: *weak* (-), *medium* or half-strong (:), *strong* (·), *extra strong* or emphatic (;). The last is only occasionally required. These marks are put before the symbol of the sound on which the stress begins, so that they serve at the same time to indicate the syllable-division: $\text{'dount :kon- trə'dikt -im}$ *do not contradict him*. But strong stress need not be marked in monosyllabic words, or when it falls on the first syllables of longer words whose other syllables have weak stress, as in veri wel *very well*. If a monosyllabic word has weak stress, it must be marked by prefixing (-).

But if the weak-stressed monosyllable contains an ə, it is not necessary to mark the stress, as this vowel occurs only in weak syllables: ə mæn əv ɒnə *a man of honour*. If only one strong or emphatic stress is marked in a polysyllable, all the other syllables are assumed to have weak or medium stress; in which case the often doubtful distinction between medium and weak stress need not be marked. Hence the sentence first given may be written more simply dount kontre'dikt -im or dount kontre;dikt -im according to the degree of emphasis.

18. It is sometimes necessary to distinguish weak vowels and syllables as 'pre-tonic' and 'post-tonic' according as they occur before or after a strong- or medium-stressed syllable; thus in *emerike America* the first ə is pre-tonic, the second post-tonic.

19. As regards intonation, we distinguish the following tones: *level* (-), which hardly ever occurs in English; *rising* ('), as in *what' what?* *falling* (˘), as in *nou' no!* *falling-rising* or compound rise (ˊ), as in *teik ˊkeə take care!* *rising-falling* or compound rise (ˆ), as in (ˆou) *oh!* as an expression of sarcasm. The tone-marks may be put either at the end of the sentence or before the word on which they fall, as is most convenient. If no tone-mark is added, a comma or ? implies a rising tone, a full stop, colon, or semi-colon a falling-tone.

ANALYSIS OF SOUNDS

20. The analytic, as opposed to the synthetic study of speech-sounds involves first of all the discrimination of the individual sounds of each language, as we have already done for Standard English. We have thus laid the foundations of a scientific phonetic study first of English sounds, and then of sounds in general.

21. Phonetics is the science of speech-sounds. But sounds may be considered from two opposite points of view, the *organic* and the *acoustic*. From the organic point of view a sound is the result of certain positions and actions of the organs of speech, as when we define *f* as a lip-teeth consonant. This is the point of view of the speaker of a language; to whom, for instance, if English is his native language, the numerical symbol 5 suggests a movement of the lower lip towards the edges of the upper teeth, by which he forms the initial consonant of the word *faiv*. To the hearer, on the other hand, *f* is not primarily a lip-teeth consonant, but a hiss consonant similar to that denoted by *p*, although this latter is formed by quite a different articulation; this is the acoustic point of view.

22. It is indispensable for the student of phonetics to cultivate both the organic and the acoustic sense: to learn to recognize each sound by ear, and to know the corresponding organic positions and actions by the muscular sensations which accompany them.

23. These processes we are continually carrying on in ordinary conversation; but, of course, only unconsciously and instinctively. All therefore that we have to do in

dealing with native sounds is to develop this unconscious organic and acoustic sense into a conscious and analytic sense.

24. The only sure basis of a knowledge of sounds in general is a thorough practical and theoretical command of a limited number of sounds—that is, of course, those which are already familiar to the learner in his natural pronunciation of his own language or dialect. It is evident that the more familiar a sound is, the easier it is to gain insight into its mechanism, and to recognize it when heard.

25. The first step is to learn to *isolate* each sound: to learn to pronounce it—whether it be a vowel or a consonant—apart from its context. Thus, let the student cut up the word *five* into ff, vv, and ai, and this last into its two constituent vowels, emphasizing and lengthening them without altering the position of the tongue. Then let him analyse *au* in *how* in the same manner, and compare the first elements of the two diphthongs both acoustically and organically. Then he may go on to transpose the sounds in such a sentence as *sing a song!* into *ŋis e ŋos*, or *rest* into *tser*, *brings* into *zŋirb*, carefully preserving the consonantal *r*—not making *tser* into *tsee*, for instance. Such exercises may be multiplied *ad infinitum*.

26. The next step is to *analyse* the formation of these familiar sounds. Let the beginner isolate and lengthen the breath consonant *f* and the corresponding voice or voiced consonant *v* till he not only hears the voice-murmur in the second one, but also feels the vibration in the throat by which that murmur is produced. He will then find that while *f* is articulated only in one place, *v* is articulated in two: between lip and teeth, and in the throat. If he presses his first two fingers on the larynx or 'Adam's apple', he will feel the voice-vibration externally as well as internally.

27. He can then go on to perform a few simple experiments. If he removes the lip from the teeth in pronouncing these two consonants, he will hear the unmodified voice-murmur of *v*, and the unmodified breath-friction of *f*, the latter in the form of a faint sigh, or aspiration. These processes can then be reversed: if the learner first breathes in the ordinary way, and brings lip and teeth together while the breath is passing out, he will produce a *f*; if he does the same while making a voice-murmur, he will produce a *v*. The same experiments should be repeated with the other pairs of breath and voice consonants *s*, *z*; *ʃ*, *ʒ*; *p*, *b* till the distinction is clearly felt and under perfect control, so that the learner can pass from the breath to the voice consonant of each pair and vice versa—*sssz*, *zzss* and so on—and feel distinctly the change of articulation in the throat.

28. He can then test his command of the distinction by deducing the unfamiliar breath consonants *lh*, *nh* from the corresponding voice consonants *l*, *n*. In trying to pass from *l* to *lh* in the same way as he has learnt to pass from *v* to *f*, he must be careful to keep the point of the tongue firmly pressed against the gums all the while; and not be misled by the acoustic effect of the new consonant into imitating its hiss by making it into *s* or *p*. So also in passing from *n* to *nh* the tongue must keep its position throughout, the only change of articulation being in the throat.

29. The movements and positions of the tongue and lips are most easily perceived by passing from one consonant to another: by comparing *t* with *k* and *p*, *d* with *l* and *ʒ*, *ʃ* with *r* and *z*, *b* with *w* and *v*, and so on.

30. Then the vowel-positions should be compared by passing, for instance, from *i* to *æ*, and then to *aa*, from *aa* to *o* and *uu*. And then, if he combines the tongue-position of *i* with the lip-position of *u*, the learner will

without difficulty obtain the French *y* in *pure*—or at least a close approximation to it.

31. If he has any difficulty in co-ordinating the two movements, he can 'round' the *ii* and *yy* mechanically by pinching the lips together with the thumb and forefinger of both hands, so as to leave only a narrow passage in the middle. He should then reverse the process by unrounding the *yy* into *ii*, which, again, can be done mechanically by separating the lips with finger and thumb. Let him then try to unround *u*, *o*, *o* and any other round vowels that may be familiar to him. The acoustic effect of rounding and unrounding may be still more easily produced—or rather, simulated—by covering the sides of the mouth with the two hands, and then removing them.

32. The share of the nose in forming nasal or nasalized sounds is soon felt by comparing the pairs *b*, *m*; *d*, *n*; *g*, *ŋ*. Then, if the learner tries to form an *m* with his mouth a little open, he will obtain a nasalized lip-consonant, which by further opening of the mouth will become a nasal *ə*, which, again, by raising the front of the tongue, he can easily make into a nasal *i*; if, on the other hand, he lowers his tongue, and draws it back, he will obtain an approximation to the French *an*, *en*.

33. When the student has gained a thorough knowledge and a thorough command of the articulations of his own native sounds, he may go on to modify them in various ways, especially by altering the degree of closure of the configurative passages. This may often be done mechanically and almost involuntarily by 'gabbling'—uttering over and over again with extreme rapidity—the syllable containing the sound which is being experimented upon. Thus if *jaja* is gabbled in this way, the tongue will involuntarily close the passage between the middle of the tongue and the palate, so that the 'open' will be converted into the corresponding 'stop' consonant. If *baba* and *mama* are

treated in the same way, two new open consonants will be produced, the second of which we have already met with as a stepping-stone to nasal *ə*. If we compare these two new consonants, we shall see that the latter is the nasalized form of the other one.

34. The time and trouble spent on these preliminary exercises is not wasted. They are the best possible preparation for the systematic study of sounds in general, which should not be attempted till the student has acquired the power of isolating, lengthening, shortening, rounding, nasalizing his natural sounds without otherwise altering them.

35. It is the height of folly to enter on a detailed study of the anatomy of the organs of speech, to begin acoustics and physics, or manipulate the apparatus of the instrumental (experimental) phoneticians before this practical mastery of the sounds of the native language has been attained.

THE ORGANS OF SPEECH

36. Most speech-sounds are ultimately formed by the air expelled from the lungs (voice-bellows). This air passes through the two contractible bronchi, or bronchial tubes, into the also contractible trachea or wind-pipe, on the top of which is fixed the cartilaginous larynx (voice-box). Across the interior of the larynx are stretched two elastic ligaments, the 'vocal chords', which are inserted in the front of the larynx at one end, while at the other end they are attached to two movable cartilages, so that the passage between—the 'glottis'—can be closed, or narrowed in various degrees. The glottis is, therefore, twofold, consisting of the chord glottis and the cartilage glottis. The two can be narrowed or closed independently. The chords can also be lengthened or shortened, tightened or relaxed in various degrees and in different directions—lengthways or crossways.

37. When the whole glottis is wide open, no sound is produced by the outgoing breath except that caused by the friction of the air. This is the foundation of 'breath' sounds, such as *f*. In 'voiced' (voice) sounds, such as *v*, the cartilage glottis is more or less completely closed, and the chords are brought close enough together to be set in vibration by the air passing through them. Breath (voicelessness) is indicated when necessary by adding the breath-modifier [*h*] in Narrow Romic, which in Broad Romic is written simply *h*: [*lh*] = *lh* = voiceless (*l*).

38. If the glottis is narrowed without vibration, 'whisper' is produced. In the 'weak whisper' there is narrowing of the whole glottis; in the 'strong whisper', which is the usual form, the chord glottis is entirely closed, so that the

breath passes only through the cartilage glottis. In what is popularly called whisper—that is, speaking without voice-vibration—the breath sounds remain unchanged, while the voice sounds substitute whisper in the phonetic sense for voice. Thus if the initial *f* of *feel* is pronounced by itself, the hearer cannot tell whether the word is spoken aloud or whispered; but if it is immediately followed by *il* formed with vibration of the vocal chords, he knows that it is spoken; if by *il* formed with only narrowing of the glottis, he knows that it is spoken in a whisper.

39. Whispered sounds may form integral elements of ordinary loud speech. Thus in English the final consonants of such words as *leaves*, *oblige* are whispered except when a voice sound follows without any pause, as in *obliging*. In such a word as *obliged* əblaɪdgd before a pause or a breath sound the two last sounds are both formed with whisper. It will be observed that whisper in consonants has acoustically the effect of weak breath.

40. The contractible cavity between the larynx and the mouth is called the 'pharynx'.

41. We now come to the mouth. Its roof consists of the 'hard palate' in front, and the 'soft palate' behind. The inner boundary of the former may easily be found by pressing a finger against it and pushing the finger back till the palate suddenly yields to the pressure.

42. The lower pendulous extremity of the soft palate is the 'uvula' (throat-tongue, as it was appropriately called in Old English). In its passive state, as in ordinary breathing, it leaves the passage into the nose open; and this makes any accompanying mouth-sound into the corresponding 'nasal' or 'nasalized' sound. Nasality is indicated when necessary by adding the nasal modifier [*n*]. In the formation of non-nasal (oral) sounds, such as *b*, the uvula is pressed backwards and upwards, so as to close the passage from the pharynx into the nose. If *b* is pronounced with

this passage opened by lowering the uvula, it becomes the corresponding nasal consonant $m = [b^n]$.

43. The other extremity of the palate is bounded by the teeth, behind which are the gums, extending from the 'teeth-rim' to the 'arch-rim', formed by the projection of the teeth-roots or 'alveolars', behind which is the hollow called 'the arch'.

44. The tongue can articulate with various parts of its surface against various parts of the palate, the teeth, and the lips.

45. The lips can articulate against each other, and against the teeth. The passage between the lips can be closed or narrowed in various degrees. Sounds modified by lip-narrowing are called 'lip-modified' (labialized) or 'round' (rounded), the last term being specially applied to vowels.

SPEECH-SOUNDS

46. The most general test of a single sound as opposed to a group of sounds (sound-combination, sound-group) is that it can be lengthened without change, as we see in lengthening a simple monophthongic as opposed to a diphthongic vowel.

47. As regards the place of articulation, no sound is really simple: every sound is the result of the shape of the whole configurative passage from the lungs to the lips; and the ultimate sound-elements, such as breath and voice, are never heard isolated. The most indistinct voice-murmur is as much the result of the shape of the superglottal passages as the most distinct of the other vowels, and its organic formation (position) is as definite and fixed as theirs is; the only difference being that while in what we regard as unmodified voice-murmur all the organs except the vocal chords are in their passive or neutral positions, the other vowels are formed by actively modifying the shape of certain definite portions of the configurative passages. Thus if we pass from the neutral vowel-murmur to *i* we raise the front of the tongue close to the palate, the lips remaining neutral as before; while in forming *u* we narrow the lip-passage, and at the same time raise the back of the tongue.

48. **Vowels and Consonants.** The two most important elements of speech-sounds are those which depend on the shape of the glottis on the one hand, and of the mouth- and lip-passages on the other.

49. It is on the relation between these two factors that the familiar distinction between vowel and consonant depends. In vowels the element of voice is the predominant one: a vowel is voice modified by the different shapes of the superglottal passages, especially the mouth and lips. In consonants, on the other hand, the state of the glottis is only a secondary element: a distinctively consonantal articulation is the result of narrowing some part of the configurative passages so as to produce audible friction, as in *f*, *v*, or of complete stoppage, as in *p*, *b*. Vowels are characterized negatively by the absence of audible friction and of stoppage. If such a vowel as *i* is formed with the tongue so close to the palate as to cause distinct buzzing, it becomes, from the articulative point of view, a consonant, although we hardly feel it as such, because it still retains its syllabic function (§ 149). Such half consonantal vowels are called 'constricted'.

50. There is no more difficulty in combining vowel-position with breath and whisper than there is with consonants. Whispered vowels occur as integral elements of loud speech in many languages; they may be heard in English in rapid speech in the initial weak syllables of such words as *together*, *September*, and in weak monosyllables such as *but*.

51. Breath or voiceless vowels may be heard in French at the end of words, as in *ainsi*, where the breath [*i*] sounds like a weak voiceless *j*. An open vowel such as *a* is much less distinct when formed with breath: it is little more than a sigh. This want of sonority is, of course, the reason why breath and whispered vowels are so much rarer than the corresponding classes of consonants.

52. The division between vowel and consonant is not an absolutely definite one. As we see, the closer a vowel is, the more it approaches to a consonant; thus it may seem

difficult to know whether to regard the English *j* as a very open or 'loose' consonant, or as a constricted unsyllabic vowel. But if it is lengthened, its consonantal buzz comes out clearly enough, showing that the former view is the correct one.

53. But there are some consonants which in their voiced forms have no more buzz than a vowel, even when lengthened, such as *l* and the nasals *ŋ*, *n*, *m*, which are accordingly called liquid, vowel-like, or 'soft' consonants, as opposed to the 'hard' consonants, which include the stops and the hisses *f*, *s*, &c., which when voiced, *v*, *z*, &c., are called 'buzzes'. *m*, indeed, is so much a vowel that it can be sung on: 'humming a tune' means singing it with the nose passage open and the mouth shut—that is, on a lengthened *m*. If we hum in this way, and then close the passage into the nose by retracting the uvula, the voice-murmur still has a purely vowel-like effect, although, of course, it cannot be held except for a short time. *b* itself, although formed with complete stoppage of the breath, is therefore acoustically a pure vowel—at least in the middle of its prolongation. It is only the audible percussion which accompanies its beginning, and still more its end, which proclaims it to be, after all, a consonant. The same percussive or flapping effect is heard, though in a less degree, at the end of *m*, *l* and the other soft consonants.

Vowels.

54. *Tongue-Positions.* As each new position of the tongue produces a new vowel, and as the number of possible positions is infinite, it follows that the number of possible vowel-sounds is also infinite. It is necessary therefore to select certain definite fixed points to serve as marks, as it were, of latitude and longitude, whence the intermediate

positions can be measured and defined with more or less minuteness.

55. The horizontal movements of the tongue produce two well-marked classes of vowels: 'back', such as aa, ɔ, u, and 'front', such as ii, e, æ. In the former the tongue is retracted into the back of the mouth, and its fore part is pressed down, so that the tongue slopes down from the back to the front of the mouth. In the latter the front of the tongue is raised towards the front of the palate, as in the front-open consonant j, so that the tongue slopes down from the front backwards. The retraction of the tongue in back vowels may be easily tested by putting the little finger inside the lower teeth while forming first the front vowel æ and then the back vowel ɔ. While the æ-position is being maintained the tip of the tongue presses on the finger. When the change is made to the ɔ-position, the tip of the tongue is drawn back quite clear of the finger. There is a third class of 'mixed' vowels, in which the tongue does not slope either way, and is neither retracted nor advanced, but lies flat in a neutral position; ə is a mixed vowel.

56. The vertical movements of the tongue, which are accompanied by, and partly depend on, the raising and lowering of the lower jaw, produce various degrees of height or distance of the tongue from the palate. In a 'high' vowel, such as ii, the tongue—in this case, the front of the tongue—is raised as high and as close to the palate as is possible without causing audible friction; while if it is lowered as much as possible from this position without otherwise altering the relative position of tongue and palate, we obtain the corresponding 'low' vowel. Thus æ is a low-front, ɔ a low-back, and ə a low-mixed vowel. If the tongue stops exactly half-way, we obtain the normal 'mid' position, as in the first elements of ei and ou, which are mid-front and mid-back respectively.

In this way the whole mouth may be mapped out schematically into nine squares :—

high-back	high-mixed	high-front
mid-back	mid-mixed	mid-front
low-back	low-mixed	low-front

57. It follows from what has been said that each of these squares admits of further subdivisions. English *i* and *ii* are both high front vowels ; but if we isolate the beginning of the vowel in *eat* and compare it with the vowel in *it*, we shall find that the tongue is raised higher in the long than in the short vowel, and that the tongue can be raised even higher than it is in the long vowel without developing consonantal friction and becoming constricted.

58. It may here be remarked that vowels as they actually occur in speech are seldom raised or lowered to their extreme positions ; which, therefore, can hardly be regarded as the normal ones. Nevertheless, in studying the vowel-system as a whole apart from any one language, it is important that the learner should get into the habit of always forming the high and low vowels in the extreme rather than in the less definite normal position—or rather, positions—so that the points from which he obtains the normal mid position of each vowel may be as definite as possible.

59. If then we regard English *ii* as beginning with the normal high-front vowel, we can define any approximation to the extreme high position as ‘raised’ *i-*, while any position lower than normal can be distinguished as ‘lowered’ *i-*. In Scotch pronunciation *i* is lowered still more ; so

much so indeed that it must be regarded rather as a raised mid vowel—e⁺.

60. If now we compare the English æ with the ideal low-front vowel, we shall find that in addition to not being fully lowered, it is not fully front : in our æ the tongue is slightly retracted. We define it therefore as 'inner', which we mark by adding the 'inner modifier', æ⁺, just as we defined the height of i by adding the 'raiser' ⁺ and the 'lowerer' ₊. When a back vowel is advanced towards the front of the mouth, it is said to be in the 'outer' position ; for which, again, an appropriate 'outer modifier' is provided. Thus u⁺ is the English sound in *put*, u₊ the German sound in *mutter*.

61. It is, of course, possible to combine the vertical and horizontal modifiers, as in æ⁺₊ = the English vowel in *man*. Such combinations as ⁺₊, ⁺₊ may be used to show expressly the normal positions implied generally by the absence of such modifiers.

62. In this way each of the nine squares may be again subdivided into nine smaller ones ; thus with the front-vowel square :—

i ⁺ ₊	i ⁺ ₊	i ⁺ ₊
i ⁺ ₊	i ⁺ ₊	i ⁺ ₊
i ⁺ ₊	i ⁺ ₊	i ⁺ ₊

Further subdivisions would go beyond the limits of appreciation of even the most sensitive and highly trained ear.

63. **Narrow and Wide.** This important distinction applies to all vowels : every vowel, whatever its position

in the scale, must be either narrow (tense) or wide (lax). In the Narrow Romic notation wide vowels are distinguished by being put in italics. French *i* in *fini* and English *i* in *finny* are both high-front vowels, but the former is narrow [i], the latter wide [ĩ]. In passing from [ĩ] to [i] the passage between the front of the tongue and the palate is further narrowed, not by raising the whole body of the tongue, but by altering its shape: in a narrow vowel the tongue is bunched or made convex lengthways, and there is a feeling of tension or clenching; in wide vowels the tongue is relaxed and comparatively flattened. The change from wide to narrow may be illustrated by laying the hand loosely on the table, and then tightening its muscles so as to draw the finger-tips back a little, and raise the knuckles, so that the upper surface of the hand becomes more convex.

64. If we lower the tongue, starting from [i] and [ĩ] respectively, we obtain the two parallel series:—

high-front-narrow [i]: F. si	high-front-wide [ĩ]: it
mid-front-narrow [e]: F. été	mid-front-wide [ẽ]: ate
low-front-narrow [æ]: air	low-front-wide [æ̃]: at

The E. vowel in *see* varies between the two extremes, [ii] in Sc., Ir., and N.E., and [iĩ] in S.E. The latter is a semi-consonantal diphthong, which may be expressed by ij in Broad Romic. It varies greatly, being sometimes almost monophthongic, and only half wide—intermediate between narrow and wide—while in vulgar pronunciation it is broadened more or less in the direction of ei and eĩ. The vowel in *say*, *name*, *vein* varies similarly between the Sc. [ee], the N.E. [eĩ-], and the S.E. [eĩ-], which in vulgar speech is broadened in the direction of eĩ.

65. Before going a step further the student should familiarize himself thoroughly with these six vowels in their ideal extreme and exact mid positions (§ 58), most of

• which are sure to be strange to his dialect, whatever it may be.

66. Most English speakers have the greatest difficulty with [e], while [i] is easily acquired by imitation, even by those to whom it is not natural. When it has been acquired, the student should cautiously 'broaden' it by slightly lowering the tongue, but without thinking of the mid position, lest he should lapse into ei. When [i-i-] has been successfully lowered to the [e-e-] of Edinburgh Sc. *say*, there will be no difficulty in fixing the normal mid sound. If [æ] is familiar, the process may be reversed by raising it gradually to the mid position.

67. [e] may be evoked mechanically by pressing down the learner's tongue with a thin paper-knife while he is trying to form [i]. But such methods should only be employed as a last resource.

68. As regards the wide vowels, it is to be observed that [i] is now generally lowered towards [i-] in S.E. But those who have this pronunciation can generally get a close approximation to the high vowel by isolating the first element of their ij.

69. The narrow and the wide vowels should be practised separately. It is confusing both to tongue and ear to pass from narrow to wide and vice versa.

70. The development of the acoustic perception of the sounds ought to run parallel with that of the control of the tongue-positions by the muscular sense. The student must learn to hear as well as feel the distinction between narrow and wide.

71. The first thing that he should cultivate is the habit of listening attentively to an unfamiliar sound till his ears are steeped in it, as it were. Not till then should he attempt to imitate it. If he fails to imitate it correctly after two or three trials, he should desist, and listen again, instead of fixing the wrong articulation by blind repetition, as most

beginners are inclined to do. And then, perhaps, the correct articulation will come to him suddenly when he least expects it.

72. It will be observed that the three narrow vowels are quite distinct from one another in sound, and so also the three wide ones, but that certain narrow vowels are very similar to certain wide vowels. Thus [æ] and [e] are so alike in sound, especially when short, that they may from the 'broad' point of view be regarded as interchangeable representatives of the 'open' vowel corresponding to the 'close' [e]. It is only by careful and repeated hearing that we can observe that the low vowel is a little broader and opener in sound than the mid one. This broader sound of the e is frequent in English, especially in the North English and Scotch dialects.

73. To understand these relations it is necessary to realize that a vowel is, acoustically speaking, voice modified by a resonance-chamber or resonator, namely the mouth. Every time we move the tongue and lips we create a new resonance-chamber which moulds the voice into a new vowel.

74. The pitch of every spoken or sung vowel can be raised by tightening, and lowered by relaxing the vocal chords, as when a scale is sung on one vowel. But each vowel has, besides, an inherent pitch of its own, which is the result of the size and shape of its resonance-chamber. Thus if i, a, and u are all sung on the same note, it is easy to hear that the first is the highest, the third the lowest in pitch, that u is deeper than a, while a itself is deeper than i. The best way of hearing the inherent pitches of the vowels is to whisper them, for this gives the pitch of the resonance-chamber, which is invariable: a whispered vowel cannot be sung.

75. If, then, we whisper the three narrow front vowels in the order high, mid, low, we shall find that [e] is a tone lower than [i], and that [æ] is a tone lower than [e]. If

we whisper the corresponding wide vowels in the same order, we shall observe the same relation between their pitches, each wide being a semitone lower than the corresponding narrow vowel, so that if we whisper all six in the order [i, ɪ, e, ɛ, æ, œ], the series will form a descending semitonic or chromatic scale.

76. The connexion between the size and shape of the resonance-chamber and the pitch is clear enough in the case of these vowels. [i] owes its high pitch to its being formed by a very narrow, short passage in the front of the mouth. In [ɪ] the flattening of the tongue lengthens and widens the passage, and consequently dulls the sound. It is still more dulled in [e], in whose formation the whole body of the tongue is lowered. In fact, in the series [i, ɪ, e, ɛ, æ, œ] there is progressive widening of the configurative passage. This may easily be tested experimentally by pressing the little finger against the palate, and trying to articulate the series against it; it will be observed that the strong pressure of the tongue against the finger in forming the first vowel is distinctly relaxed in the second, and still more in the third, and so on till the extreme [œ] is reached, in whose formation the tongue does not touch the finger at all.

77. **Rounding.** Rounding can, of course, be added to all the tongue-positions.

78. The degrees of rounding are infinite. As fixed points we distinguish three, corresponding to the three heights of the tongue, the general rule being that the higher the tongue-position of the round vowel, the narrower the lip-passage, as may be seen by comparing the back round vowels:—

high-back-narrow-round [u]: F. sou	h.-b.-wide-r. [ʊ]: good
mid-back-narrow-round [o]: F. beau	m.-b.-w.-r. [ɔ]: oil
low-back-narrow-round [ɔ]: all	l.-b.-w.-r. [ɒ]: not

79. It is to be observed that the English *o* is generally slightly diphthongic, which is the result of the tongue being allowed to slip into the mid-mixed-wide-round position at the end of the vowel, so that it may also be written [oɔ̯]. Compare *aa*, § 91.

80. In going down either of these series it will be seen as well as felt that as the tongue is lowered from the high-back position, the lip-passage is progressively expanded. In 'high rounding' the lip-passage is made as small as possible without causing friction, in 'mid rounding' there is a wider opening of the lips, and in 'low rounding' they are only drawn together a little at their corners.

81. But abnormal rounding also occurs. There is no difficulty, for instance, in combining mid position of the tongue with high rounding, as in the second element of *ou* in *no*, which differs from the first only in being formed with high instead of mid rounding, the position of the tongue remaining unchanged throughout the whole diphthong. This kind of abnormal rounding is called 'over-rounding', and is expressed by adding the 'rounder' to the symbol of the corresponding normally rounded vowel. Thus the Narrow Romic notation of English *ou* is [oo̯].

82. It is also possible to under-round. The vowel in *good* is 'under-rounded' in the dialects of the North-west of England: the high position of the back of the tongue is retained, while the lips are relaxed almost to low rounding. Under-rounding is expressed by adding the *rounder* to the symbol of the corresponding un-round vowel; thus the vowel in question is written [ə̯]. This vowel has to a Southern ear a sound intermediate between that of *put* and *putty*.

83. In comparing narrow and wide *u* it will be observed that there is a tendency to pout the lips more in the former. The same difference is observable, though in a less degree, in *o* and *ɔ*. This pouting is only a secondary phenomenon,

which is the result of the strong general contraction in the back of the mouth with which back vowels are made narrow. Lip-pouting does not sensibly modify the acoustic effect of a vowel: it only makes the rounding a little more marked.

84. The differences in the pronunciation of the English back-round vowels are parallel to those in the front series. The vowel in *too* varies between the two extremes of the Sc. and N.E. [u] and the S.E. [uʊ] or uʊ, in which the first element is sometimes narrow or half wide, besides undergoing various changes in position (§ 98 foll.), which are mainly the result of the tendency to the outer position in the English back-round vowels, as may be seen by comparing them with the fully retracted German [uu, u, oo, o] in *gut, mutter, so, oft*. The English ou, like the ei, has its first element narrow in the North, wide in the South, where it is, however, sometimes only half wide. In vulgar pronunciation the o of ou is broadened and unrounded in various degrees, so that it often becomes a broad au. The first element of oi is sometimes lowered towards [ɔ].

85. It is, of course, just as easy to round front as back vowels, although front-round are not so frequent in languages as back-round vowels. They do not occur in St. E. But the student should now learn to round at least the narrow front vowels, by which he will obtain the following well-marked series of vowels, all of which occur in French:—

high-front-narrow-round	[y]: F. pur
mid-front-narrow-round	[ɛ]: F. peu
low-front-narrow-round	[œ]: F. peur

86. What has been said of the relations between tongue height and rounding in the back-round applies equally to the front-round vowels. Here also we find occasional abnormal rounding. Thus if [ɛ] is over-rounded into

[ə] by exaggerating its mid into high rounding, we obtain the North German long vowel in *über*, which has a duller sound than that of the French *u*.

87. When the student has learnt to round [i, e, œ] into [y, ə, œ] respectively, he should test the accuracy of the process by unrounding the latter. If he is able to make the distinction between French *u* and German *ü*, he will find that while the French vowel unrounds into an [i], the German vowel unrounds into [e] or [e-].

88. Here, as with the front vowels, the student must learn in time to dispense with the help of key-words—which at best are never absolutely reliable guides—and form his round vowels, both front and back, in their most ideally distinct forms, so that, for instance, his [i] and [y] have exactly the same tongue-position, which even in French is not always the case.

When facility has been attained in unrounding the front-round vowels, the student should proceed to the more difficult task of unrounding the back-round vowels.

89. The greater difficulty of unrounding these is mainly the result of the difference between the 'inner rounding' with which they are formed and the 'outer rounding' of the front-round vowels. In the latter the lips are brought together vertically, so that such a vowel as *y* can easily be unrounded mechanically by separating the lips upwards and downwards with the finger and thumb of both hands. In inner rounding, on the other hand, there is lateral compression of the sides of the mouth and the cheeks. To unround a back-round vowel mechanically it is necessary to introduce a finger and thumb some way into the corners of the mouth, and expand sideways. Inner rounding, when it is necessary to distinguish it from outer rounding, is denoted by adding the 'inner rounder' [ɹ], which symbol, like that of rounding, is taken from the Organic Alphabet. If a back vowel, such as *a*, is modified by outer rounding

only, it does not become the corresponding round vowel, but is merely muffled in sound.

Front position can, of course, be combined with inner rounding. Inner-round [y] has a deeper pitch than the normal outer-round [y]. These vowels resemble the corresponding round mixed ones (§ 97), which, when formed with the tongue in the outer position, are almost identical with them.

90. Back (un-round) vowels. These are obtained by unrounding the back-round vowels already described :—

high-back-narrow [ʌ]	high-back-wide [ɑ]
mid-back-narrow [a]: up	mid-back-wide [ɑ]: father
low-back-narrow [ɐ]: occ.	low-back-wide [ɔ]: F. pas
F. pas	

91. The student should begin with unrounding [o], which will give the mid-back-wide vowel, the 'Italian a' in *father*, *calm*. The English aa is less clear in sound than the Italian because it is more or less muffled by the neutral position of the lips, which in Italian, as in many other languages, are habitually spread out at the corners—except, of course, in round vowels—which raises the pitch of the vowels by widening the mouth of their resonance-cavity. Our aa also differs from that of most other languages in being slightly diphthongic: it generally ends in the mid-mixed-wide vowel, so that it might be written aæ.

92. By unrounding [ɔ] we obtain the deeper-sounding low-back-wide, which is frequent in French and in many English and Scotch dialects.

93. Turning now to the narrow vowels, if we unround [o], we get the English vowel in *come up*.

94. The high-back vowels are the most difficult to unround. [ɑ] may be heard as the first element of ai in some English dialects, and in Ir.E. in the word *Irish* itself.

95. Mixed vowels. These are denoted in Broad Romic

by two dots over the symbol of the front or back vowel of the same height, whichever is most convenient. The unround mixed vowels are :—

high-mixed-narrow [ɪ] :	high-mixed-wide [i̥]
N. Welsh un	
mid-mixed-narrow [ə̥] :	mid-mixed-wide [e̥] :
Sc. better	better [ɛ̥]
low-mixed-narrow [ʌ̥] :	low-mixed-wide [ɑ̥] : how
air	

The student should begin the narrow series with the low, the wide with the mid position, unless, of course, other positions are more familiar to him. The high mixed vowels are the most difficult to acquire.

96. From the acoustic point of view it is important to note that the mixed vowels have the same pitch as the corresponding front-round vowels. Thus [ɪ] has the same pitch as [y], and [ʌ̥] has the same as [œ], which explains why French *peur* sounds like *purr* to an English ear. Speaking acoustically, we may say that [ʌ̥] is the [œ] of *care*, obscured, not by rounding, as French [œ] is, but by flattening the tongue.

97. The round mixed vowels are not frequent in language, being mostly vague and indistinct in their acoustic character; their rounding is inner; outer rounding only muffles them :—

h.-m.-n.-r. [ʊ̥] :	W.E. two	h.-m.-w.-r. [u̥]
m.-m.-n.-r. [ɔ̥]		m.-m.-w.-r. [o̥] : Dutch <i>beter</i>
l.-m.-n.-r. [ɔ̥]		l.-m.-w.-r. [ɔ̥] : N.Ir., Swed.
		full.

98. Shifted vowels. We have already seen that all back vowels do not have exactly the same degree of tongue-retraction : we distinguish between inner and outer back. If we start with the fully retracted [u̥] of German *mutter*,

und, and shift the tongue progressively forward in the mouth, without otherwise altering its position relative to the palate, we at last move it right out into the middle of the mouth, into the position of a mixed vowel. This is called the 'out' position, and is denoted by the addition of the 'out-shifter': [ʊ̟]. This is the vowel in the second—unstressed—syllable of *væljʊ value*, although many have only [ʊ] for weak u. Narrow long [u̟] is the N.Ir. vowel in *you*.

99. An out-back vowel is, therefore, one which, while retaining the slope of a back vowel, has the place of a mixed vowel. The round out-back vowels have nothing of the acoustic quality of the mixed vowels; and yet are quite distinct from the fully retracted back vowels: they are intermediate in sound between them and the corresponding front-round vowel; thus [u̟] has a sound between that of [u] and [y].

100. [ɔ] and [ɔ̟] are also shifted to the out-position in unstressed syllables in English, as in the last syllable of *solo* [ɔ̟o̟], and the first of *October* [ɔ̟].

101. By unrounding the former of these we obtain the mid-out-back-wide [a̟], which is the first element of E. *ai*, and is a frequent substitute for [a] in *come up*. This vowel has something of the acoustic effect of a mixed vowel.

102. By unrounding [ɔ̟] we obtain the low-out-back-wide, which is the thin French *a* in *la patte*, and a frequent substitute for *æ* in many E. dialects. It has a clearer sound than [a̟], just as [ä] is clearer than [ɛ̃]; acoustically it is between [a] and [æ̃].

103. Just as a back vowel may be shifted forward into the out-position, so also a front vowel may be shifted back into the 'in' position, denoted by the 'in-shifter' [ɛ̣], although the difference between in and inner front is not generally so marked as that between out and outer back. High-in- (or inner-) front-wide [ị] is frequent in such words

as *pretty* and *prince*. Mid-in-front-narrow is one of the many pronunciations of the vowel written *ui* in Sc. in such words as *guid* 'good'.

104. Mixed vowels also have an in-position, obtained by retracting them into the full back position while keeping the tongue flat, instead of sloping it from back to front as in a genuine back vowel. If the [ä] of *sir* is retracted in this way, we get the low-in-mixed-narrow [ä̃], heard in the Irish pronunciation of *come up, sir!* [ĩc] is the most usual pronunciation of Scotch Gaelic *ao*, as in *gaoth*, 'breeze,' where the *th* is silent.

105. Table of Vowels. The following tabulation of the vowels will be found convenient for reference, and practice in passing from one to the other :—

1. ʌ	7. ɪ	13. i	19. a	25. ɪ̃	31. ĩ
2. ʌ	8. ɐ̃	14. ɐ̃	20. a	26. ɛ̃	32. e
3. ʊ	9. ʌ̃	15. æ̃	21. ʊ	27. ā	33. œ̃
4. u	10. ŭ	16. y	22. u	28. ū	34. y
5. o	11. ɔ̃	17. ɐ̃	23. o	29. ɔ̃	35. ɔ̃
6. ɔ̃	12. ɔ̃	18. œ̃	24. ɔ̃	30. ɔ̃	36. œ̃

37. iɛ	43. ʌɔ	49. iɛ	55. ʔɛ	61. ʌɔ	67. iɛ
38. ɛɛ	44. ʌɔ	50. ɛɛ	56. ɛɛ	62. ʌɔ	68. ɛɛ
39. ɛɛ	45. ʊɔ	51. ɛɛ	57. ʌɛ	63. ʊɔ	69. ɛɛ
40. ʊɛ	46. ʊɔ	52. ɣɛ	58. ʊɛ	64. ʊɔ	70. ɣɛ
41. ɔɛ	47. ɔɔ	53. ɛɛ	59. ɔɛ	65. ɔɔ	71. ɔɛ
42. ɔɛ	48. ɔɔ	54. ɔɛ	60. ɔɛ	66. ɔɔ	72. ɔɛ

Consonants.

106. Consonants admit of a twofold division, (1) by form, (2) by place.

Thus p, b are by place lip-consonants, by form stopped consonants or stops.

107. Nasal consonants are formed by closing the mouth passage in different places, while the nose-passage is left open by lowering the uvula. If any stopped consonant, such as d, is modified in this way, it becomes the corresponding nasal, in this case n.

108. When a non-stopped (open or divided) consonant is formed with the nose-passage open, it is said to be 'nasalized'. Thus if we try to pronounce m with the lips a little apart (§ 32), we obtain the nasalized lip-open consonant [β_n].

109. Open consonants are the result of narrowing instead of completely closing the passage, as in the back-open-breath [x] in Scotch and German *loch*, Spanish *hijo*. This consonant may easily be deduced from the corresponding stop in *lock* by emphasizing and isolating the 'breath-glide' after it. The back-open-voice [ɣ] in Middle German *sagen* may be obtained by gabbling *gaga*.

110. In some open consonants there is sometimes slight contact of the organs. Thus in *p* and *f* there is often contact of the tongue and teeth, and lips and teeth respectively. But this does not sensibly impede or otherwise modify the flow of breath, except by increasing its friction.

111. In divided (side, lingual) consonants there is central stoppage with opening at the sides of the tongue, as in the point-divided-voice *l*. When this consonant is unvoiced, the friction of the air along the sides of the tongue is both felt and heard very distinctly. The divided consonants are often formed with an opening on one side only, and are then called 'unilateral'. The voiceless Welsh *ll* is generally unilateral, the breath escaping only on the right side. Unilateral formation of voiced *l* is also not unfrequent in Welsh and other languages. Unilateral formation does not sensibly modify the quality of the sound.

112. Trilled (rolled) consonants are special varieties of non-stopped consonants. They are formed by the vibration of flexible parts against each other, as when the lips are trilled, or against some firm surface, as when the point of the tongue trills against the gums in the Scotch [rr], where [r] is the 'trill-modifier'. The 'burred *r*' is a uvula-trill: the uvula is lifted up by the back of the tongue, is driven upwards by the force of the out-going air, falls by its own weight, is driven up again, and so on. In this sound—which is a frequent substitute for *r* both in individuals and in dialects—the trilling part is passive, while in [rr]

the trilling tip of the tongue is active. In learning the latter, the tongue should be lightly thrown, as it were, against the gums; if it is held at all stiffly, trilling is impossible.

There are some more general modifications of consonants which fall under the head of form.

113. Thus all consonants may be formed either with tightness (constriction) or looseness, according to the degree of approximation of the organs. Thus the English *j* is much less constricted than the buzzed German consonant in *ja*—so loose, indeed, that it is almost a vowel.

Tightness and looseness must not be confounded with narrowness and wideness.

114. This latter distinction applies to consonants as well as vowels, although it is generally hardly noticeable in consonants, because of their harsher sound, but if the English *j* and *w* are lengthened, their wide quality becomes at once apparent. English *w* is a consonantized [u], while French *w* in *oui* is a consonantized [u]. This is why in French *w* the lips are pouted, while in the English *w* they are flat (§ 88). English *j* is loose and wide, while English *w* is tight (constricted) and wide—that is, at the beginning of a stressed syllable. When unstressed it is loose, as in the second syllable of *wayward*. If *way* is pronounced with the loose *w* of *-ward*, the word becomes irre recognizable. This loose *w* has only the mid rounding of [o] or [ô], which latter it most nearly resembles.

115. By place the number of consonants, like that of the vowels, is infinite. As with the vowels, we select certain definite points of division, and distinguish intermediate positions as inner and outer. The main divisions are back, front, point, blade, fan, lip, lip-teeth.

116. **Back (guttural) consonants** are formed between the root or back of the tongue and the soft palate. In English, as in most other languages, the place of articulation varies according to the nature of the accompanying vowels. Thus in *king* *kiŋ* the front vowel draws the back stop and back nasal forward into the outer position, the contact being between the upper part of the back of the tongue and that part of the soft palate which is just behind the beginning of the hard palate. In *gong* *goŋ*, on the other hand, the low back vowel draws them back into the inner position, the contact being between the root of the tongue and the lower part of the soft palate. If we take two such words as *key* and *caw*, and transpose their consonants, *k-i-i*, *k-o*, the great difference between inner and outer back becomes clearly apparent.

117. **Front (palatal) consonants**, such as the front-open-voice *j*, are formed by the middle of the tongue against the hard palate, the point of the tongue lying passively behind the lower teeth. It is easy to make *j* into the front-stop-voice *ɟ* by closing the passage (§ 38). This was the sound of Old English *cg* in *hrycg* 'back' and of *g* in *sengan* 'sing', where the preceding *n* is the corresponding front-nasal-voice consonant *ɲ*. The inner form of the same consonant [*ɲ̥*] is the French *gn* in *vigne*. If *j* is formed with side-openings while the central contact is maintained, it becomes the front-divided-voice *ɬ*, which is the sound of Old English *l* before front stops, as in *swelc* 'such', where *c* is the front-stop-breath consonant *c*, which, again, is the result of stopping the front-open-breath *q* in German *ich* and the North English and Scotch initial consonant in such words as *hue* *quu*, which in Southern English is generally pronounced *hjuw* with *h* followed by voice *j*.

118. *ɬ* and *ɲ* must be carefully distinguished from the consonant-groups *lj*, *nj* in *million*, *onion*, although the *l* and *n* in these words have not exactly the same sound as

the ordinary point *l* and *n* in *mill*, *none* ; they are modified by the following *j* into a combination of point (tongue-tip) articulation with simultaneous outer front contact. If the syllables *mil* and *en* in the above words are isolated, the front modification of their final consonants will be plainly heard.

119. Point consonants may be classified in two ways, (1) with reference to the part of the mouth they articulate against, and (2) according to the direction of the tongue. From the first point of view they are distinguished as 'inner point', formed on the arch-rim, 'medium (intermediate) point', formed on the gums just behind the teeth, and outer point or 'point-teeth' (dental), formed on the teeth. From the second point of view they are distinguished as 'flat-point', in which the tongue lies horizontal in the mouth, and 'up-point', in which it is directed upwards.

120. When the tongue is in the first direction, as in *p*, *t*, it naturally points to the teeth ; hence these two consonants are flat-point, and at the same time point-teeth consonants. But if the flat direction is preserved, it is possible, although not natural, to form inner—or rather, innermost—*p*, *t* as far back as the arch-rim. If formed on the gums just behind the teeth, these consonants are practically indistinguishable from the normal point-teeth varieties.

121. When the tongue is directed upwards, as in the *r* in *red*, *rearing*, it as naturally points towards the arch-rim ; hence *r* is normally both an up-point and an inner-point consonant. And yet, if the tongue-tip is curled upwards, an *r* can be formed in the medium point position as well.

122. The English *r* is vowel-like in sound, being quite free from buzz, which is partly the result of its being loose, partly of diminished breath-pressure. Trilling the *r*—'rolling one's *r*'s'—is considered a defect in English, although it is not unfrequent in declamation.

123. In English the other point consonants *t*, *d*, *n*, *l* are formed in the medium position. In combination with *p* and *ɸ* they are formed in the outer position, as in *breadth*, *eighth*, *tenth*, *wealth*. Outer *t*, *d*, &c., are the normal sounds in French, and some English dialects.

124. Blade consonants are formed by the 'blade' of the tongue, that is, its surface immediately behind the point. If the hand represents the tongue, then the upper blade would be roughly represented by the finger-nails. The blade of the tongue may also be regarded as its flattened point. The blade-open consonants are in English formed against the gums just behind the teeth, in the same place as *t*, *d*, *n*, *l*. These latter are in English often formed with the tongue somewhat flattened, so that they are approximations to blade-consonants.

125. If *s*, *z* are modified by turning the tongue upwards and backwards, so as to bring the point more into play, they become the point-blade consonants *ʃ*, *ʒ* respectively. The blade-point stand to the blade consonants in the same relation as *r* stands to *ɹ*; *ʃ*, *ʒ* being the up-point consonants corresponding to the flat-point *s*, *z*. Hence although *ʃ*, *ʒ* are naturally formed more inner than *s*, *z*, both classes can be retracted as well as advanced without being confused.

126. The point-blade have a deeper pitch than the blade consonants: *ʃ* is, acoustically, a dull *s*. In some languages, such as German, this dull quality of *ʃ* is exaggerated by rounding, one result of which is that the tongue-articulation tends to be neglected, so that at last nothing remains but a slight raising of the blade or outer front of the tongue. Rounding of *ʃ*, *ʒ* occurs individually in English.

127. When the blade-point are combined with point consonants, as in *church* *tʃeətʃ*, *judge* *dʒədʒ*, *singe* *sɪŋ*, *Welsh* *wɛɫʃ*, they are formed with less retraction of the

point, being thus intermediate between blade and blade-point consonants both in formation and sound.

128. **Fan (spread) consonants** are varieties of point and blade consonants; they are denoted by the modifier [*l*]. In them the sides of the tongue are spread out, so that the hiss of such a consonant as the blade-fan-open [*sl*] is formed not only between blade and gum, but also between the sides of the tongue and the back teeth, which gives a peculiar deep, dull 'guttural' quality to the sound. *tl*, *dl* occur in Irish English as substitutes for *p*, *ð* respectively; in them the fan modification is supplemented by a slight raising of the back of the tongue. Fan *l* may be heard in Scotch Gaelic.

129. **Lip consonants**, such as *p*, *m*, and **lip-teeth** consonants, such as *f*, offer no difficulty.

130. The lip-open consonant *ɸ* does not occur in English: it is the sound produced in blowing out a candle. The lip-open-voice consonant *β* can be obtained by gabbling *baba*. It is a frequent substitute for *v* in German, especially in such words as *quelle*, where another consonant precedes, and was the old-fashioned substitute for *w* in Dickens's 'Sam Veller'.

131. If the lip-open consonants are modified by raising the back of the tongue, they become the English **lip-back-open** consonants *wh*, *w* in *what*, *we*, which are, practically, consonantized [*u*], although the back of the tongue need not necessarily be raised to the full high position. In these consonants the lip-articulation predominates.

132. In the **back-lip-open** [*xw*] of German *auch* and North Irish *wh* in *what* the back *x* is the predominant element. This was one of the sounds of *gh* in Middle English, as in *laugh*, *enough* *lauxw*, *enuuxw*.

133. **Compound Consonants.** This last is one of a large number of 'lip-modified' consonants, of which the German

sch is, as we have seen (§ 126), a further example. Lip-modified *r* is not uncommon in English as an individual peculiarity.

134. In a similar way consonants can be 'front-modified'. French and German *l*, as compared with the deeper-sounding English *l*, may be regarded as front-modified; in them the tongue is more convex than in English, its upper surface being arched up towards the front position of *j*. In French, [y] is often consonantized into the lip-front-open (front-modified lip-open) sound in *lui* [lʏji]. Front-modified forms of *r*, *s*, *m*, and other consonants may be heard in Russian.

135. **Shifted Consonants.** In the consonants hitherto described it has been taken for granted that the tongue articulates against that part of the mouth which is opposite to it. But this is not always the case. Thus in advancing the point of articulation of a back consonant it is not necessary to stop short at the outer extremity of the soft palate—in the *k*- or *kʰ*-position; it is possible to articulate still further forward, with the outer back of the tongue against the hard palate. In this way we get the out-back *k*, which, although it is from one point of view a front consonant, is quite distinct from *c* or even *cʰ*. *k*, *g* are the old-fashioned sounds in such words as *sky*, *garden*. To an unaccustomed ear they sound like *kj*, *gj*. In Irish Gaelic such pairs as *k* and *c* are kept quite distinct: the former is heard in *ceol* [k:ool] 'music', the latter in *teacht* [ca:xt] 'to come'.

136. The out-point consonants *t*, &c., are formed with the tip of the tongue against the upper lip. They do not seem to occur in articulate speech.

137. The in-point, in-blade, and in-blade-point consonants, generally included under the term 'inverted', occur in many languages; the in-*r* is heard in the dialects of the West of

England. In their formation the tip of the tongue or its blade is turned back into the arch, so that its lower part articulates against the palate. Articulation against the arch-rise may be regarded either as outer in-point or inner point. The full in-r has a snarling, almost nasal effect. It can hardly be trilled. It is often formed simultaneously with—incorporated into—the preceding vowel, which then becomes an in-point-modified vowel.

The Arabic *q*, which is a *k* formed even further back than the English *k* in *caw*, may be regarded as an in-back consonant—*kc*.

138. Non-oral Consonants. Some consonants are formed below the mouth.

It is, for instance, possible to produce a stopped consonant in the larynx by opening or closing the glottis on a passage of breath or voice. The opening is heard in an ordinary cough, while the convulsive closure of the glottis results in what is known as a hiccup. This 'glottal stop' [!] occurs also as an integral element of ordinary speech. In German all initial vowels in stressed syllables begin with a more or less distinct glottal stop; and this occurs also in some English dialects, and in individual pronunciation in Standard English as well. In some North English and Scotch dialects (such as that of Glasgow) the glottal stop occurs as a substitute for the ordinary mouth-stops, as in the Glasgow pronunciation of *water* *waler*.

For the aspirate *h*, which is to some extent an open glottal consonant, see § 169.

139. Non-expiratory Sounds. All the sounds hitherto described imply out-breathing or expiration. But they can also be formed with in-breathing or inspiration. Thus in English it is a not uncommon trick of speech to pronounce *no* with in-breathing to express emphatic or earnest denial.

Some consonants are produced without either out- or in-breathing, solely with the air in the mouth or throat.

140. The sounds known as 'clicks' or suction-stops are examples. In their formation the tongue or lips are put in the position for an ordinary stop, and then the air is sucked out from between the organs in contact, so that when the stop is released a sharp smacking sound is produced. Thus the lip-click is an exaggeration of an ordinary kiss, and the point-click is the interjection of impatience written *tut!* In some savage languages clicks are an integral part of ordinary articulate speech.

SYNTHESIS

141. Besides analysing each sound separately, phonetics has to deal with the various phenomena which accompany synthesis, that is, the succession or combination of sounds in syllables, words, and sentences. Although a sentence may consist of a single word, and that word of a single vowel, most sounds occur only in combination with others.

142. The ordinary division of speech into sentences, and of sentences into words, is logical, not phonetic: we cannot mark off the sentences in continuous discourse, and cut them up into words, till we know the meaning of these words and sentences, and are able to analyse them grammatically.

143. But the logical and grammatical division into sentences corresponds to some extent with the phonetic division into 'breath-groups', marked off through our inability to utter more than a certain number of sounds in succession without pausing to take breath.

144. Within these breath-groups there is no pause or break between the words except where we pause for emphasis or to make grammatical distinctions. The only necessary phonetic distinctions within a breath-group are into syllables, sounds, and intervening 'glides'.

The three general factors of synthesis are quantity (length), stress (force), and intonation.

145. **Quantity.** Although in the broad phonetic notation of English it is necessary to mark only two degrees of vowel-quantity, it is easy to distinguish at least five: over-long [++], long [+], half-long or medium [*], short [·], and very short or abrupt [•]. + is written as a notched stroke.

146. The distinction between long and medium is well marked in English, although it does not generally require to be indicated in writing, as it is regularly dependent on the nature of the following consonant. The rule is that strong-stressed vowels when final or before a voice consonant are long, while before a voiceless consonant they are only half-long, as in *see* *sit*, *seize*, *broad* compared with *cease* *sit's*, *eat*, *brought*. The difference is equally marked in the diphthongs, as in *no*, *ride*, *oil*, compared with *right*, *voice*. In other languages full length is preserved before voiceless as well as voiced sounds, as may be heard in the German pronunciation of *all right*!

147. The distinctions of quantity apply to consonants as well as vowels. In English there is a tendency to lengthen final consonants after strong short vowels, as in *man* compared with German *mann*, where the final consonant is quite short. There is also a tendency in English to lengthen soft consonants before voice consonants, and shorten them before voiceless consonants, as in *build* *bilt*d, compared with *built* *bilt*.

148. **Stress.** This is, organically, the result of the force with which the breath is expelled from the lungs; acoustically it produces the effect of loudness, which is dependent on the size of the sound-vibrations: the bigger the waves, the louder the sound, the greater the stress.

For the degrees of stress see § 17.

149. On stress depends syllable-division. A syllable consists of a 'syllabic' (syllable-former), either alone or accompanied by non-syllabics. The distinction between the two depends on sonority: the more sonorous a sound is, the more easily it assumes the function of a syllabic. The most sonorous sounds are the voiced ones, among which the most open are the most sonorous, the most sonorous of all sounds being the clear, open *a*. But the difference is only a relative

one. When a vowel and a consonant come together, the syllabicness of the vowel overpowers that of the consonant; but in such a word as *little* litl the second l is so much more syllabic than the preceding voiceless stop that it assumes syllabic function, and the word is felt to be disyllabic, although it only contains one vowel. The syllabic quality of the final consonant in *little*, *reason* ri:zn, *open*, &c., does not require to be marked, because as long as these final consonants are voiced they are necessarily syllabic. If it is necessary to indicate syllabicness of a consonant in the interior of a word, this can be done by putting -, or whatever stress-mark is required, after it, as in bɜtn-ɪŋ *buttoning*, bɒtl-ə *bottler* compared with *butler*.

150. The beginning of a syllable corresponds to the beginning of the stress with which it is uttered. Thus in *atone* the strong stress and the second syllable begin on the t, and in *bookcase* buk:keɪs on the second k, the first k belonging to the first syllable, so that the kk is here really double—that is to say, there are two of them—not merely long, as in *book* buk by itself (§ 147).

151. Two vowels in succession uttered with one impulse of stress, so as to form only one syllable, constitute a diphthong. The English diphthongs ai, oi, au are 'falling' diphthongs, having the stress on the first element, so that it is the second element which is non-syllabic. The u and eu in such words as *union*, *euphony*, was also a falling diphthong iu in the Early Modern English of the sixteenth century. In the beginning of the eighteenth century the stress in this diphthong was shifted on to the second element, so that it became the 'rising' diphthong i-u, i-uu. As the unsyllabic vowel in such a diphthong is practically indistinguishable from a loose j, it is best to write it accordingly, ju, juu, keeping the notation iu for the falling diphthong. In English the falling diphthongs weaken their second elements, so that they are no longer full i, u, as in some

languages and even in some English dialects ; thus *au* in Scotch is full [au], that is, *ʌ* followed by high narrow *u*, so that it might also be written *aw*.

152. It is not always easy to draw the line between diphthongic and disyllabic pronunciation, as in the English murmur-diphthongs such as *iə*, which when uttered slowly have more or less of a disyllabic effect. This is still more the case with triphthongs such as *aie*.

153. Conversely, in very rapid and careless speech even such vowel-sequences as those in *poetical*, *coerce*, *Æolic*, *pou'etiki*, *kou'æes*, *ii'oliki* often become shorter by a syllable, so that they might be roughly symbolized by *pwetiki*, *kwees*, *joliki*.

154. Intonation (§ 19). This depends on the rapidity of the sound-vibrations : the quicker the vibrations, the higher the pitch, the sharper and shriller the tone. Voiced sounds are the only ones capable of variation of pitch, which in speech and song depends on the tension of the vocal chords and the length of their vibrating portion : the tighter and shorter a string or similar vibrating body, the higher the pitch.

155. In singing, the voice generally dwells on each note without change of pitch, and then leaps up or down to the next note as smoothly and quickly as possible, so that the intervening pitch-glide is not noticed, except in what is called 'portamento'. In speech, on the other hand, the voice hardly ever dwells on any one note, but is constantly moving upwards and downwards, sometimes by leaps, but more generally by glides, in which all the intermediate notes are heard in more or less rapid succession, as in portamento.

156. The different tones—rising, falling, &c.—vary in character according to the interval through which they pass. The greater the interval, the more emphatic the tone. Thus

a high rise, which begins high, and consequently can only rise a little higher, expresses simple question; while the same word, if uttered with a low rise extending over an interval of an octave or even more, expresses surprise or indignation, as in *what!* compared with the simply interrogative *what?*

Glides.

157. **Consonant-glides.** Such a word as *cat* consists not only of the vowel and the two consonants of which it is made up, but also of glides or positions between these sounds. The glide from the initial consonant to the vowel consists of all the intermediate positions through which the tongue passes on its way from the *k*-position to that of *æ*. The number of these positions is infinite; but they are all implied by the mere juxtaposition of the symbols of the fixed sounds, it being assumed that in all transitions from one position to another the shortest way is taken.

158. Although the direction of a glide is thus dependent on the positions of the two fixed points between which it lies, its character may be varied both by the shape of the throat- and mouth-passages—especially the glottis—and by stress and quantity.

159. In the word given above the two 'off-glides' from the consonants are both breath-glides, the glottis being kept open during the transition from the *k* to the *æ*, and also during the loosening of the stop of the final consonant—that is to say, during the transition from the *t* to silence. The 'on-glide' from the vowel to the *t* is, on the other hand, a voice-glide, the vibration of the chords being maintained till the stop is made.

160. In French and most of the languages of the South of Europe voiceless consonants are generally followed by voice-glides. Thus in French *qui* there is no escape of breath as

in the English *key*. Nearly the same pronunciation may be heard in Scotch.

161. Some of the languages of the North of Europe have breath on-glides before voiceless stops, as if *t*, *k*, &c., were preceded by a *h*.

162. If an independent strong stress is put on the breath-glides after the consonants in such words as *two*, *key*, they are heard almost as full consonants—as weak *p* and *x* respectively. Such consonants are said to be ‘aspirated’. Initial voiceless stops are regularly aspirated in Irish-English and in Danish. Sanskrit and Old Greek *kh*, *th*, *ph* were no doubt pronounced in the same way—as, indeed, they still are in India.

163. The voice-glides after the voice-stops *g*, *d*, &c., may be emphasized in the same way, giving the ‘sonant aspirates’ *gh*, *bh*, &c., of Sanskrit.

164. Voice consonants between vowels in English, as in other languages, have both their on- and off-glides voiced, as in *ago*, where the chords vibrate continuously throughout the whole word. But if a voice stop in English is not preceded by a vowel or other voiced sound, as when *go!* is uttered by itself, it is not voiced throughout, the chords being only gradually brought together, so that full voice is not heard till just before the transition to the vowel. So also with buzzes (voiced hiss consonants), as in *seal*. When these latter consonants come at the end of a word and are not followed by voiced sounds, they have full vocality only at the beginning, so that they end with something between voice and whisper, as in *ease* compared with *easy*. In French and many other languages such consonants preserve their full vocality in all positions.

165. Glideless combinations remain to be considered. The principle of taking the shortest cut between sounds in juxtaposition necessarily results in certain transitions being effected without any glide at all. This is regularly the case

when the two sounds are consonants having the same place, and differing only in form as in *and*, *halt*, where the point of the tongue remains unmoved throughout the two consonants, the transition from the *n* to the *d* being effected simply by opening the passage into the nose, and that from *l* to *t* by opening the passages at the sides of the tongue, and opening the glottis at the same time. In such combinations as *mf* the slight glide between the two consonants is in most languages got rid of by assimilating the place of the first consonant to that of the second: thus in English *nymph* the *m* is a lip-teeth instead of a pure lip-nasal.

166. Even when consonants are formed in quite different places, it is often possible to join them without any glide. In English, stop-combinations are glideless, as in *active*, *apt*, *robbed*, *headpiece*, the second stop being formed before the preceding one is loosened. In French and most other languages such combinations are separated by a breath or voice glide.

167. Combinations of soft consonants with other consonants, whether hard or soft, are glideless in most languages, as in English *try*, *quite*, *glow*, *bulb*. In English the breath-glide after a stop in such a word as *try* unvoices the first half of the following soft consonant, so that *try* might almost be written *trh-rai*.

168. Vowel-glides. Vowels are begun and ended in various ways.

In the 'gradual beginning', which is the usual one in French and English, the glottis is gradually narrowed while breath is being emitted. Thus in pronouncing *aa* with gradual beginning the glottis begins to close at the same moment that the tongue begins to move from the neutral mixed position into the mid-back one. In the 'clear' beginning the breath is kept back till the chords are in the position for voice and the tongue is in the position for the

vowel, so that the vowel begins at once without any of the preparatory 'breathiness' of the gradual beginning. In German the clear beginning is generally exaggerated into a glottal stop.

169. In the gradual as well as the clear beginning the stress begins on the vowel itself. If in the former the stress begins on the breath glide, this glide is felt as an independent element, just as in the aspiration of consonants (§ 162), and becomes the 'aspirate' *h*, which in its ordinary English form is a glide both in the throat and in the mouth.

170. Some languages have a 'strong aspirate', in which the full position for the following vowel is assumed at the moment when breath begins to be emitted, the aspirate in this case being simply a voiceless vowel, so that, for instance, *hii* with the strong aspirate sounds almost like *çii* and *haa* like *xaa*. The strong *h* may be heard in American English.

171. In most languages, when an aspirate comes between voiced sounds, it is formed with 'half-voice' or imperfect vocality. Thus in English *behold!* compared with *hold!* the chords vibrate throughout the whole word, but their vibration is so feeble during the *h* that the contrast of this weak vocality with the full vocality of the other sounds is enough to produce the effect of aspiration. In the emphatic *aha!*, on the contrary, the glottis is opened enough to let out a distinct puff of air, instead of merely relaxing its closure, as in half-voice.

PHONETIC STRUCTURE OF ENGLISH

172. English, like all other languages, uses only a part of the general phonetic material. It has only a limited number of sounds. If we compare the English of the present day with the English of King Alfred, we shall find that many of the sounds of Old English have been lost in the present Standard English, some of them being still preserved in the dialects. On the other hand, the later English has developed many sounds of its own, some only within the last few centuries, such as the vowels *ʊ*, *æ*. Again, each language and each period of a language makes, or may make, a different use of the synthetical distinctions of quantity, stress, and intonation. Thus in the Middle English of Chaucer, consonants written double were still pronounced double, as in *sonne sunnæ*, 'sun,' distinct from *sone sune*, 'son,' the *nn* in the former being pronounced as in our *penknife*. We do not know what the intonation of Alfred and Chaucer was, but it may have been very different from ours as well as from that of each other.

173. Present English has therefore its own national sound-system, differing in many respects from that of Middle English, and still more from that of Old English; although, on the other hand, it has preserved more or less faithfully many of the characteristics even of Old English, such as the old original pronunciation of *w*, lost in the other Germanic languages. Present English has also preserved the Old English *þ*, *ð*, which, again, are lost in the other cognate languages, except Icelandic.

174. Each national sound-system shows certain general tendencies which control the formation of its sounds, con-

stituting its organic basis (basis of articulation). The general tendencies of present English are to flatten and lower the tongue, and draw it back from the teeth, the lips being kept as much as possible in a neutral position. The flattening of the tongue makes our vowels wide, and favours the development of mixed vowels. It also gives a dull character to our sounds, which is especially noticeable in the *l*. The retraction of the tongue gets rid of point-teeth consonants. The neutrality of the lips has eliminated the front-round vowels.

175. But these tendencies are not carried out uniformly. Thus the desire of distinctness has preserved the point-teeth consonants *p*, *t*.

Sound-junction.

176. The great rapidity with which sounds follow each other in speech naturally leads to a more or less conscious attempt to make the necessary transitions as easy as possible. We have already seen that the principle of taking the shortest and most direct path from one articulation to another naturally leads to modifications of these articulations (§ 165). This tendency exists in all languages, but some carry it out more fully than others. English is one of those languages in which the sounds are, on the whole, but little liable to be influenced by their phonetic surroundings. The effects of sound-junction in English are trifling compared with the changes effected in French by its liaisons, and the still more marked modifications due to the consonant-mutations in Welsh, and the sandhi (putting-together) of Sanskrit. Many of the English changes are, like the French liaisons, only negative, involving not sound-change, but sound-loss: certain sounds are dropped in certain positions and under certain circumstances, preserved in others.

177. Sandhi in Sanskrit is of two kinds, *internal* and *external*; the former deals with sound-changes within words,

the latter with the changes which are the result of the junction of the final sound of one word with the initial sound of the next. The natural tendency of language is to carry out all these changes without regard to word-division, which, as we have seen (§ 142), is not really a phonetic phenomenon. Thus the English change of *m* before *f* into a lip-teeth consonant is in natural speech carried out uniformly whenever the two consonants are run together without any pause, no matter whether they belong to the same word or not. And so we have internal sandhi in *comfort*, external sandhi in *come forth*, *I saw him fall*.

178. But, on the other hand, all languages show a reaction against this natural development—a reaction which is the equally natural result of the striving after clearness of expression and distinctness, and the consequent desire to preserve the individuality of each word by giving it one invariable form in all its combinations with other words. One of the reasons why English generally gets rid of sandhi long before it produces marked changes and divergencies in the forms of words is that its brevity makes it necessary for the language to preserve the individuality of its words as much as possible.

179. The extent to which any one language develops sandhi, and the form that development takes, depends on the phonetic structure of the language. One, for instance, in which every consonant is separated from every other consonant by a vowel, or in which every word begins with a consonant and ends with a vowel, would not have the same temptation to develop sandhi—either internal or external, as the case might be—as one in which harsh and difficult consonant-groups are frequent, as in English. And yet, although in everyday speech we find it difficult not to yield to the temptation to make *fifths* and *sixths* into *fifss* and *sikss*, with a lengthened *s* instead of *ps*, we cannot regard these pronunciations as normal; in all moderately

careful speech we always at least make an effort to pronounce the *p*.

180. But there is a distinct tendency in English to drop the middle one of three consecutive consonants even when there is no special difficulty in their sequence. In fact, this is often more an acoustic than an organic change, the middle consonant being dropped mainly because it does not strike the ear distinctly, through being a repetition of its neighbour, as in the *las(t) time*, *an ol(d) dog*, or formed in the same place, as in *beas(t)ly*, *I don'(t) know*.

181. Liability to sandhi is often the result of other phonetic changes, such as the English tendency to shorten, obscure, and then drop weak vowels, by which, for instance, Old English *hlāfas* and *fiscas* became in Middle English *looves* and *fishes* *looves* and *fisses*, and then *loovez* and *fisez*, whence the present *loovz ən fɪz* *loaves* and *fishes*, the weak vowel having been restored in the last word because of the difficulty of pronouncing *fɪz*. In such a case as this the difficulty amounts practically to an impossibility.

182. In the Modern English forms of such Middle English plurals as *cattes*, *shippes* the difficulty of pronouncing final *tz*, *pz* was got rid of by glottal assimilation. The natural phonetic change would have been to make *kætz*, *fɪpz* into *kædz*, *fɪbz*; but as this would have obscured the identity of the words, the assimilation was reversed by unvoicing the final consonants. So also in *blest* compared with the older disyllabic *blessed* and disyllabic *beloved* compared with the longer form *belovèd*.

183. But the influence of sound-junction is not always in the way of causing change: it is often conservative, change-preventing, as in the preservation of the full vocalicity of consonants between vowels (§ 164).

184. A frequent cause of sound-change in many languages is the tendency of nasal consonants to assimilate the place

of their formation to that of the adjoining consonants, especially if the consonant is a stop. In English, such pronunciations as *in*kəm *income*, *in*geɪdʒ *engage*, *dəʊ*n *care*, where *dount* first loses its final consonant and then shifts the place of the preceding nasal, are only occasional.

185. The change of *sj* into *ʃ* and *xj* into *ʒ* in such words as *sure*, *nation*, *measure* began already in the second half of the seventeenth century, the older pronunciations *sjuur*, *næəsjun*, *mezjur* being still the usual ones at the beginning of the century. The parallel development of *tj*, *dj* into *tʃ*, *dʒ*, as in *nature*, *verdure*, began at the same time. Both are now fully established in natural English speech, although some 'careful speakers' still try to pronounce *neitjuə*, *væədjuə*. The standard pronunciation *neɪtʃə* was itself originally an artificial revolt against the seventeenth century *neetər*, which now survives only as a vulgarism. In trying to avoid this, some half-educated speakers fall into the error of making *laughter* into *laaftʃə*. We still fluctuate between *tj*, *dj* and *tʃ*, *dʒ* in such words as *multitude*, *education*. Such pronunciations as *tʃuwtə*, *indʒə* for *tjuwtə*, *indjə*, *tutor*, *India*, are Irish rather than English.

186. These fluctuations are aided by the English tendency to partially front-modify *t*, *d* before *j* in the way already described with reference to *nj*, *lj* (§ 118). When *tj*, *dj* are approximated in this way to *ɕj*, *ɟj*, it is sometimes difficult to distinguish them from *tʃ*, *dʒ*. Even *tj* with pure point *t* is liable to be confounded with *cɔ* through the off-glide of the *t* unvoicing the beginning of the *j*, *cɔ* being similar in sound to *tʃ*.

187. All these changes may be observed also in separate words, as in *don't you*, *would you*, *eight years*. When *sj*, *ʃj* meet in separate words, they tend to become *ʃʃ*; *xj*, *ʒj* being assimilated analogously into *ʒʒ*, as in *this year*, *all*

these years, las(t) year, push you, rouge you. j is often lost after tʃ, dʒ, as in *catch you, oblige you.*

188. The influences hitherto considered are of consonant on consonant. Of the influences of consonants on vowels the most important are those exercised by r: they constitute one of the most characteristic features of Modern English.

r in English occurs only before a vowel following it without a pause, as in *hearing, here it is* *hiəriŋ, hiəri it iz*; before a consonant or a pause it disappears: *he hears, he is here* *hij hiəz, hiɪz hiə*. In some pronunciations r is always dropped at the end of a word whether a vowel follows or not: *his it iz*. This seems to be an artificial reaction against the insertion of final hiatus-filling r after e in such groups as *India Office, the idea of it*, which is frequent even in educated speech. The insertion of r after other vowels as in *Pu isn't in, I saw it in the drawing-room* *drɔrɪŋrʊm* is quite vulgar.

189. The influence of r on preceding vowels is twofold: (1) it develops a voice-glide, as in *hiəriŋ* compared with Scotch *hiiriŋ*, Middle English *heringe* *heeriŋgə*, *fire* *faie* compared with Middle English *fir fiir*; (2) it broadens and obscures the vowel, partly by direct influence, partly through the influence of the parasitic ə. The change of e into a, as in *star, dark, clerk*, from Middle English *sterre, derk, clerk*, goes back to the end of the Middle English period itself, the first development of the glide-r, to the beginning of the Modern English period (sixteenth century).

190. It is to be observed that r has no influence on a preceding short vowel when it is itself followed by a vowel in the same word: compare *car, care*, with *carry*, where a has the same sound as in *manner, quart* with *quarrel*, where it has the same sound as in *quality*. So also in *spirit, merry, furrow, sorrow* compared with *fir, mirth, her, turn, sore, sort*.

191. In the sixteenth century such words as *her*, *bird*, *turn* were still pronounced as they were written, with a distinct *r*, *u* still preserving the sound it now has in *full*.

192. In the next century *u* = [u] was unrounded in all words into [a], which was afterwards broadened into the present sound, *turn* being pronounced with the same vowel as *up*. The *e* of *her*, *vertue* was obscured into a variety of the mixed vowel ə. There was now so little distinction between *er*, *ir*, *ur* when not followed by a vowel in the same word that they were soon confounded under ə*r*. But the distinction between such words as *serf* and *surf* is still kept up in some Irish dialects ; and in the older Scotch pronunciation these words were still distinguished as *serf*, *surf*.

193. In the eighteenth century *r* and *ə* broadened preceding [e+] into [æ+], as in *care*, *fair* compared with *name* [næm], *faïn*; and [æ] into [a], as in *star*, *hard*, earlier *stær*, *hærd*. The same broadening is seen in the present pronunciation of such words as *bore*, *boar*, *floor* compared with *bone*, *boat*, *boon*.

194. In present English they have arrested the change of *ii*, *uu* into *ij*, *uw*, as in *here*, *poor* *hiə*, *puə* compared with *heel*, *pool*, besides widening these vowels, and lowering them towards *e*, *o*. In vulgar pronunciation *poor* is levelled under *pore*, and sometimes both of these are further levelled under *paw*. These pronunciations are now beginning to find their way into educated speech as well. Weak *eiə* is often broadened into *eə*, as in *bricklayer* *brikləə*, and regularly in *ŕeə* *they are*. In careless speech this change as well as the corresponding broadening of *ouə* into *oə* is sometimes carried out in strong syllables as well, as in *a lower layer* ə *lœ* *lœə*.

195. The pronunciation of *poor* as *paw* is an extreme case of the absorption of the *ə* by a preceding broad or mixed vowel. *ə* necessarily disappears after *eə*, as in *stir* *stœə*, *stœrin*, *stœr it*, and *aa*—which, as we have seen (§ 91), is

really æ—as in *far*, *starry faa*, *staari*. *Father* and *further* are both pronounced alike; and the *r* which many unphonetic observers persist in hearing in the latter word is, of course, only the *ə*, which is just as distinct in *father*. *o* also ends in a mixed vowel; but as this vowel is rounded, there is no difficulty in adding an *ə* to it. Some speakers seem to keep the *ə* everywhere except before the *r* itself, as in *pouring*, *pour away*. Many drop it before a consonant in the same word, as in *poured*, *pours*. Others also before a consonant in another word, as in *pour down*, and some drop it before a pause as well, so that they make no more distinction between *lore* and *law* than the majority of the educated do between *lord* and *laud*.

196. *r* sometimes takes a voice-glide before it to facilitate the transition from a preceding consonant, as in *umbrella*, *Gibraltar*, where the *ə* after the *b* in both words is too short to constitute a syllable. Such insertions are more frequent in vulgar speech.

197. Shifting of syllabic function is in English as in other languages an occasional result of sound-junction. In Southern English the words *milk* and *children* are hardly ever pronounced as they are written. In both of them the *l* has the syllabic function of a vowel, before which the vowel of the former word becomes unsyllabic, while the vowel of the latter word is generally dropped: *mjl̩k*, *tʃl̩dr̩n*, and even *mjuk*, *tʃuld̩r̩n*, *tʃl̩r̩n*, *tʃl̩r̩n*.

198. Syllabic shifting is frequent in the diphthong *iə*, which is then made into *jəə*, a *h* generally disappearing before the *j*. Even in the pulpit we may sometimes hear *he that hath ears to hear let him hear* pronounced *hij ðet hæp jəəz tə jəə let him jəə*.

199. The influence of vowel on vowel is seen in the two pronunciations of *the* and *to* as *ðə*, *tə* before consonants and *ði*, *tu* before vowels, the latter being of course the older forms: *ðə friend*, *ði enimī*, *tə gou tu iɪdɪpt*.

200. The hiatus-filling *n* in *an enemy* compared with *a friend* is also the older form—a weakened *one*—preserved before a vowel. We still often write *an* before *juw* in *union*, &c., through the tradition of the earlier pronunciation in from Middle English *yy*. Some still keep this pronunciation before weak *juw*, as in *an united Europe*, but the general tendency is to use *a* here also.

Gradation.

201. Perhaps the most characteristic feature of English phonology is the extreme sensitiveness of its sounds to variations in the degree of stress, giving rise to the varied phenomena of gradation.

202. In fully weak syllables there is a tendency in English to modify all vowels in the direction of shortness, lowering of high vowels, and mixed position, under which is included the out-modification of back, and the in-modification of front vowels. The extreme of weakening is reached when the vowel is merged under *ə*, which is itself liable to become whispered, and then to be dropped altogether.

203. Vowels like *ə* which occur only in unstressed syllables are called 'weak'. The diphthongs *ai* and *au* change their first elements into *ə* in unstressed syllables, as in *ei so it*, *eidie*, *hæueve* compared with the emphatic *ai so it* and the full-stressed *how*. The more important of the other weak vowels may be conveniently denoted by a superimposed *˘*, which at the same time dispenses with the necessity of specially marking them as unstressed. They are the lowered *ɪ* in *pitɪ*, *ɪvent pɪty*, *event*, and the out-back *ʊ*, *ɔu*, *ɔ* in *væljʊ*, *zuwɫʊw*, *soulɔu*, *ɔktoubə value*, *Zulu*, *solo*, *October*. But all the strong vowels have weak forms of their own. Thus the *e* in *insect* is slightly higher than that in *sect*, and yet is distinct from *ɪ*. So also if the two vowels in *æbstrækt abstract* are isolated and lengthened,

the weak one will be found to be an approximation to *ə* both in position and sound. It is hardly necessary to mark the distinction in these rarer cases, as it is generally implied by the weak stress.

It must be clearly understood that 'weak' as opposed to 'strong' implies a definite change of articulation: if a strong vowel underwent no change when unstressed, it would be a weak-stressed but not a weak vowel.

204. The degree of obscuration of the English vowels depends to some extent on the rapidity with which they are uttered. In very rapid and careless speech *ɪ* may sometimes be lowered and retracted so much as to make it difficult to distinguish it from *ə*, as in the ending *-able, -ible* in such words as *possible*. *ɔ* is liable to be unrounded and merged in *ə*. Thus *or* is pronounced *oə, ɔ, ɔ, ə* according to the degree of emphasis that is given to it. Most weak vowels are liable to change into *ə*, although such pronunciations as *jə* for *jū* *you* and *jə, jɔ* *your*, *felə* for *feləu* *fellow* border on the vulgar, even if they often pass unnoticed in rapid and indistinct speech.

The distinction between strong and weak is therefore a relative one; thus *ɔv* is strong as compared with *əv*, which again is stronger than *ə* (§ 207).

205. Weak stress often causes dropping of consonants as well as vowels. Weak initial *h* is kept only at the beginning of a sentence, as in *hɪz sɔɪm he saw him*. The *h* is of course restored in the strong emphatic forms, as in *hiz sɔ hæ, ən fɪz sɔ him he saw her, and she saw him*. Many educated—and many more half-educated—speakers make a point of keeping the *h* everywhere. Most of them succeed only partially, forcing out the weak *h* with a painful effort when speaking slowly, and dropping it as soon as they are off their guard. The dropping of weak *h* is as old as the time of King Alfred; *it* by the side of *he* is simply the

Old English weak form which supplanted the strong form *hit*, because the neuter pronoun seldom required to be emphasized, and so the strong form fell out of use. Weak *h* is often dropped in the second element of compounds, as in *household*, *Birmingham*, and other names in *-ham*, where, however, the *h* has often corrupted the pronunciation, as in *Lewisham* *luifəm*, *Eltham* *elpəm*.

206. The *d* of *and* is generally dropped before consonants, especially hard consonants, as in *now and* (*ən*) *then*, *better and better*, the vowel being often dropped as well, especially in familiar combination such as *bread and butter*, the nasal being often assimilated in place to the preceding consonant, as in *cup and* (*m*) *saucer*, *knife and fork* with lip-teeth *m*.

207. Other consonant-droppings occur in careless speech. Thus *ev of* often becomes *ə* before consonants, the word being, indeed, written *o* in *o'clock*, and some other traditional phrases, showing that this, like many other weak forms, is not a mere modern vulgarism. Weak *must* and *St.* = *Saint* generally drop their final consonants before another consonant, as in *ei mæs gou*, *sn dgonz wud*.

208. The careless, almost vulgar *əm* for *ðem* *them* is probably a weakening not of this form, but of the Middle English *hem* 'them'.

209. The dropping of weak *w* in the second element of compounds and word-groups, which was carried out consistently in the seventeenth century, survives only in such verb-forms as *he'd*, *he'll*, for *he had*, *he would*, *he will*, and in isolated words such as *Greenwich* *grinidz*, *towards* *tōdz*, which latter is now being supplanted by the artificial *təwōdz*.

210. Those to whom the pronunciation of *wh* as a breath consonant is natural generally make it into *w* wherever weak *h* is liable to be dropped.

211. The substitution of *jōə*, *jōəz* *your*, *yours* for the

older emphatic forms *jue*, *juæ* is partly the result of the tendency to broaden strong as well as weak *u* before *ə* and *r*. They are the only words which have weak vowels in strong- as well as weak-stressed syllables. The forms *jœ*, *jə*, *jœ* with the full low-back-narrow vowel also occur.

212. Strong forms, on the contrary, often occur unstressed. Thus *ðæt* may have as weak stress as *ðet*, as in *ei nou ðæt I know that*.

213. Such pairs as *ðæt* and *ðet* are examples of 'stress-doublets'. *ðer* and *ðæ*, as in *ðæz nouwen ðæ there is no one there*, are a further example of how doublets may develop into distinct words whose meanings and grammatical functions have nothing in common.

214. The weak forms of verbs and prepositions with *ə* or a dropped vowel occur only when they are followed without a pause by the word they modify or belong to; if they come at the end of a sentence, they assume the medium or unstressed strong form; before a parenthetic insertion they take strong stress as well: *hɪj z hie, ei nou ɪj :iz he is here, I know he is, ei kən duw ɪt, et lijt ei ;pɪŋk ei :kæn I can do it, at least I think I can, whot ə jʊ pɪŋkɪŋ ðv compared with ei ɒt əv ɪt I thought of it, hɪj iz, :ɪf ei :meɪ bɪ əlaʊd tə sei sɔʊ, mɪsteɪkn he is, ɪf I may be allowed to say so, mistaken*.

215. There is also a tendency to substitute the strong for the weak form when the latter is followed by another weak form, as when a preposition is followed by an unemphatic pronoun. Thus although we say *ei ɒt əv ɪt* with two consecutive weak forms, we generally avoid such a collocation as *ei v kəm fər ɪt*: we say rather *ei v kəm fɔr ɪt*, although of course *fɔr* is here only a 'half-strong' form as compared with *fər*. In such combinations the preposition often takes not only the full strong form but also medium or strong stress, as in *ɪt s ə mætər əv ɪndɪfrəns :tuw mɪj it is a matter of indifference to me*.

216. Of course any weak word can assume the strong form if it is emphasized or followed by a pause. Even such words as *and* and *the* can thus be made into *ænd* and *ði*. Many speakers habitually use stressless, unemphatic *ænd* in slow speech at the beginning of a sentence who would never introduce it into such groups as *here and there*.

THE SOUNDS OF STANDARD ENGLISH

WE will now enumerate the sounds of standard, that is, educated, undialectal English, without, of course, attempting to fix an absolutely rigid norm.

217. The vowels are as follows:—

ɜ. Outer mid-back-narrow [ɜ[•]], mid-out-back-wide [ɜ[˚]], both of which are also written more conveniently **a** whenever there is no fear of confusion with the short of the **aa** in *father*: *up, worry, unjust, rough, flood*. Of the two pronunciations of this vowel, the former is the older and the more widely spread, so that it has every claim to be regarded as the standard one; but the two are so alike that it is difficult even for a trained ear always to discriminate them with certainty. Some speakers certainly use the two indifferently. But they always preserve strictly the narrowness of the one and the wideness of the other. If the former is widened, it gives a thin sound, as distinct from **aa** as it is from **ɜ**; and the narrow [ɜ[•]] is an equally un-English sound—using English in the sense of Standard English. **ɜ** in medium-stressed syllables, as in the second of *humbug* and the first of *ulterior*, is not perceptibly modified; when fully unstressed, as in *pugnacious* and the second syllable of *hubbub*, it often becomes indistinguishable from **ə**.

aa. Mid-back-wide + mid-mixed-wide [a^ē]: *baa, fast, half, bar, barred, bard, starry, clerk, heart*. The after-glide would, of course, be suppressed in singing; nor is it universal even in Southern English. Weak **aa** is almost short in such words as *aha, sarcastic*.

ai. Mid-out-back-wide + lowered high-front-wide [asi-]: *eye, try, buy, mile, sign, sighed, height, aisle*. When weak it becomes ei with [ē] as its first element: *idea, graphite*. In the triphthong aie the i is often further lowered and retracted: *fire, lyre, crier, higher, wiry, fiery*. In the weak aie the second ə becomes almost inaudible: *irate, ironical*.

au. Low-mixed-wide + mid-mixed-wide-round [äö]: *now, house, howl, doubt*. Weak eu: *however, compound*, adj. auə: *hour, flour, flower, flowery, allowance, coward*.

ə. Mid-mixed-wide [ē] a little lowered: *upon, adversity, suppose, concern, sofa, better, asylum* əsailəm, *cupboard* kəbəd, *harmony, Saturday* sætədɪ. In rapid speech this vowel often becomes a mere murmur or voice-glide without any definite configuration.

æ. Low-mixed-narrow [ä+]: *err, sir, furry, burn, earth, hurt, word*. Shortened when weak: *perverted, fertility, adverse, proverb*. In rapid speech weak æ is liable to be shortened, raised, and widened in various degrees, till at last it is merged into ə.

i. High-front-wide [i], generally lowered more or less, and often slightly retracted as well: *ill, irritate, hymn, sieve, busy, guilt*. There is a tendency to retract i into the inner or in position after r preceded by another consonant (§ 108). Weak ɪ is lowered and retracted; those who lower the strong i, lower ɪ still more: *efficient, deception, invent, embody, pity, many, merit, women, village, miniature* minɪtʃə, *Israel* ɪzriəl. In rapid speech ɪ is liable to be confounded with ə in certain collocations; but a constant substitution of ə for ɪ in such words as *it, village* is Irish.

ii. High-front-wide + the same raised [ii-], which may be expressed by ij: *see, sea, mean, grief, fatigue, people*. Although the pure monophthongic narrow [i+] pronunciation of this vowel is not the usual one in the South of England, it does not sound dialectal, but rather refined

by contrast with the broader vulgar pronunciation which makes *lady* into *lydy*, and *see* almost into *say*. Pretonic weak *i* is somewhat shortened in such words as *equality*, *precede*, *create*, while in other words it generally becomes *ɪ*, as in *eternity*, *reality*, *siesta*. In *ie* the first element is always wide, and generally lowered—still more in the weak *ie*: *here*, *hear*, *cheer*, *idea*, *weary*, *real*, *theatre*, *weird*, *museum*; *hereafter*.

e. Mid-front-wide [e], also low-front-narrow [æ], which when slightly raised is very similar in sound: *any*, *ate*, *head*, *says*, *ten*, *bury*, *berry*, *friend*. Weak *e* is raised a little: *insect*, *stipend*, *pestiferous*. Pretonic weak *e* often becomes *ɪ*, and sometimes disappears almost entirely: *severity*, *cessation*, *mendacity*.

ei. Mid-front-wide + lowered high-front-wide [ei̯]: *eh*, *say*, *veil*, *name*, *break*, *straight*. The first element is narrow in the North of England. But this pronunciation is not felt to be dialectal: the essential feature of the sound is that it is always diphthongic, although the rise of the tongue is often very slight, especially in weak *ei*: *railway*, *name-sake*, *chaotic*. *eiə*, as in *layer*, *gayer*, *players*, is apt to become *ee* in careless speech, especially when weak, as in *bricklayer* (§ 194).

ee. Low-front-narrow + mid-mixed-wide [æē]: *air*, *fair*, *fare*, *bear*, *mayor*, *scarce*, *Baird*. When weak the first element is slightly raised: *therein*, *somewhere*, *bricklayer*.

Low-front-wide [æ] a little retracted: *add*, *axe*, *carry*, *man*, *thresh*, *plait*. Weak *æ* is a little raised: *alpaca*, *abstract*, *adj*.

u. Outer high-back-wide-round [u̯]: *full*, *put*, *hook*, *woman*, *could*. Weak *u* is sometimes kept unchanged, sometimes advanced into the out position [u̯], Broad Romic *ū*: *hurrah*, *influential*, *into* (before a vowel, § 199). *ū* is liable to further weakening into *e*, as in *instrument*, and to be absorbed by an adjoining *l*, as in *fulfil*, *useful* *fɪl*, *juustl*.

uu. Outer high-back-wide-round + the same vowel over-rounded [uu], which is practically equivalent to uw: *two, pool, truth, group, fruit*. juu is felt as a simple vowel: *yew, youth, unit, Tuesday, suit, tube*. What has been said of the monophthongic narrow pronunciation of ii applies also to this vowel; intermediate pronunciations with the first element half narrow and almost imperceptible over-rounding of the second may be heard in Southern English. The less stress uu has, the more its first element is moved forward in the mouth, and the less distinct the second element becomes, as in *judicious, unite, absolute*, till at last nothing is left but ũ, as in *value, virtue, educate*, or ə, as in *regular*, the ə being dropped before another ə, as in *valuable* væljəbl.

uə. Outer high-back-wide-round + mid-mixed-wide [u^ə]: *poor, sure, tourist, gourd; ever, pure, during, dual*. Weak uə tends to become ũə, and to drop the ə as in *gradual, duration*, the ũ being sometimes further weakened into ə, as in *penury*. uə, ũə lower their first element towards the mid position in some pronunciations.

o. Low-back-wide-round [ɔ]: *honour, not, salt, quarrel, laurel, knowledge*. Weak ɔ is the corresponding out vowel [ɔ̃]: *October, prosperity*.

o. Low-back-narrow-round + mid-mixed-wide-round [ɔ̃ɔ̃]: *awe, saw, all, story, pause, cough, broad; order, court, warm*. Weak o is somewhat shortened and advanced towards the out position: *already, authentic, portentous, importation, landau*. oə: *boa, bore, oar, more, door, four*. Weak oə undergoes the same changes as weak o, the ə often becoming almost inaudible: *foresee, therefore*.

ou. Outer mid-back-wide-round + the same with high rounding [oo]: *oh, no, oak, soul, growth*. The first element is narrow in the pronunciation of the North of England—a pronunciation which is not felt to be dialectal, and, indeed, mostly passes unheeded. The close monophthongal [õ] is distinctly dialectal or foreign. The weak

ðu advances the first element to the out position, and makes the second almost or quite inaudible: *coincide, poetical, heroine, heroes, solo, follow*. ðu is often substituted for strong ou; to those who have not this pronunciation it sounds affected and effeminate. ouə: *lower*. ðuə: *follower*.

oi. Outer mid-back-wide-round + lowered high-front-wide [oɪ-]: *boy, oil, coin, hoist*. In some pronunciations the first element is lowered almost to [ɔ]. In weak oi the first element is advanced to the out position: *envoy, turmoil*. ois: *employer, joyous*.

218. The following are the consonants of Standard English:—

h. Aspirate or breath-glide (§ 169): *hard, he, who, uphold, aha; behold, abhor*.

k. Back-stop: *call, cart, cat, kill, quell, axe, ache*.

g. Back-stop-voice: *garden, gall, log, gig, egg, anger*.

ŋ. Back-nasal-voice: *singing, sink, tongue, longer*.

j. Front-open-voice: *yes, union, hallelujah, vignette*. hj, as in *hue, human*, becomes q in Northern English.

t. Point-stop, nearly blade-stop, which applies also to the three next: *ten, tight, too, enter, art, hit*. t- in *eighth*. tj in *tune*.

d. Point-stop-voice: *do, did, add, under, width d-, due dj*.

n. Point-nasal-voice: *no, knee, own, hand, ninth n-, India nj*.

l. Point-divided-voice: *little, all, hill, field, wealth l-, value lj*.

r. Inner-point-open-voice: *ray, row, rhetoric, rearing, very*. It is a defect to trill r, although this is sometimes done in recitation.

þ. Point-teeth: *thin, thought, throw, thwart, ether, earth*.

ð. Point-teeth-voice: *then, thither, with, soothe*.

s. Blade-open: *so, cease, scene, psalm, hiss, quartz*.

z. Blade-open-voice: *zeal, easy, scissors, cleanse, puzzle*.

j. Blade-point-open : *she, shred, mission, ocean, nation, fish*.
Less retracted in *tʃ, nʃ, lʃ* : *church, fetch, question, culture*;
branch, mention ; *Welsh, convulsion*.

g. Blade-point-voice : *measure, seizure, rouge*. Less retracted in *dʒ, lʒ* : *judge, large, soldier*.

p. Lip-stop : *peep, happy, stop, lamp*.

b. Lip-stop-voice : *bee, baby, ebb, amber*.

m. Lip-nasal-voice : *may, lamb, calm, timber*. Lip-teeth-nasal-voice : *nymph, Banff*.

wh. Lip-back-open : *why, when, which*.

w. Lip-back-open-voice : *we, witch, one, square*. Weak *w* has diminished rounding (§ 114) : *forward, northward, headway*.

f. Lip-teeth-open : *few, fife, phrase, rough, left*.

v. Lip-teeth-voice : *view, vivid, five, valve*.

STYLES OF PRONUNCIATION: PHONETICS AND ELOCUTION

219. Phonetics in a wider sense is something more than the science of speech-sounds and the art of pronunciation. It includes also voice-production; which, again, is the foundation of elocution and singing. These two latter subjects are, however, only partially comprised under the science of speech-sounds—even in its widest meaning: they stand to it much in the same relation as the practical study of languages does. And although voice-production is really a part of the science of speech-sounds, it is most convenient to separate it from phonetics, and make a special study of it in conjunction with the other two, of which it is the foundation.

220. The essential difference between phonetics in the narrower sense of the word and voice-production is that the former aims only at correctness of pronunciation, while the latter is concerned mainly with the quality of the voice. Two natives may speak their own language with an equally correct pronunciation, but the voice-production and elocution of the one may be better than that of the other; and a foreigner or provincial speaker who is unable to pronounce correctly may be a still better elocutionist: his voice may carry further and with less effort, its tone may be clearer, and more resonant and harmonious.

221. These qualities of the voice—which are even more important in song than in speech—depend mainly on the way in which the vocal chords are made to vibrate. This again depends on the voice-register which is employed: in

the lower of these, the 'thick' or chest register, there is more vibration than in the higher, the 'thin' or head register, which in men's voices is called 'falsetto'. The voice-trainer, whether in speech or song, has further to take into account the natural differences between the voices of men on the one hand, and the higher-pitched voices of women and children on the other, together with the classification of the different voices according to their natural height and compass as bass (contralto), baritone (mezzo-soprano), tenor (soprano), and the subdivisions of these. All this does not directly concern the phonetician: to him a given vowel remains the same whether it is uttered by a man or a woman, whether it is produced with good or bad tone.

222. In one respect, however, phonetics really works hand in hand with elocution, and that is in developing distinctness of articulation. It is not necessary that the teacher of phonetics should insist specially on this point: the knowledge of the organic movements, and the conscious practice of them naturally tends to give them greater strength and decision. No practical phonetician, however bad the quality of his voice-tones may be, ever articulates his consonants in a slovenly and indistinct manner. Distinctness of pronunciation is thus the common property of phonetics and elocution.

223. Correctness of pronunciation, on the other hand, is, as we have seen, a specially phonetic, not an elocutionary question. And yet there is none on which elocutionists are more ready to dogmatize than on this. Most of them attach as much—or even more—importance to correcting what they assume to be defects of pronunciation in their pupils as to improving their voice-production.

224. They are seldom content with attacking vulgarisms and provincialisms; they make war on principle on all colloquialisms, although, of course, they find it impossible to get rid of them in practice. They ignore gradation and the

obscuration of unstressed vowels; the general result of which is that the pupil is forced to acquire an artificial elocutionary language distinct from that of everyday life. His elocution suffers from this in many ways. The constant effort to avoid falling back into natural habits of speech robs his delivery of all freshness and freedom, the very muscles of his throat partake of the general rigidity, and the purity of his tone is impaired. Even when the artificial habits by long practice become a second nature, the result is always unpleasing, because it is artificial and unnatural.

225. It has often been argued that by giving an artificial distinctness to weak sounds, as in the orthographic pronunciation of our dictionaries, we make the words more distinct. It is of course true that in themselves such words as *sænd*, *tuw*, *foe* are more sonorous, and in so far more distinct, than *n*, *tə*, *fə*, but it does not necessarily follow that the context is made more intelligible by substituting an unexpected strong form for the natural weak one. In fact, the contrary is so much the case that misunderstanding may arise from such substitutions. Thus in the sentence *I shall be at home from one to three* the substitution of *tuw* for *tə* at once suggests a confusion between the preposition and the numeral. So also by making *sendi* into *sendei* we only incur the risk of being understood to say that we will come some day instead of on Sunday. The truth is that we cannot make words more distinct by disguising them. Another disadvantage of this artificial pronunciation is that it often gives a false or exaggerated emphasis, as in *brəd sænd bætə*, which seems to imply 'bring me bread, and don't forget the butter!'

226. Another argument sometimes adduced in favour of artificialities of pronunciation is that they improve the language by making it more sonorous or more harmonious. There is no doubt something in this. Where the standard dialect admits a variety of pronunciations, it is not only

allowable but desirable to select that one which is preferable either in itself or through its associations. Thus in singing, no one would hesitate in preferring monophthongic *ii* and *uu* to *ij* and *uw*, and reducing the diphthongization of *ei* and *ou* to a minimum, and in preferring the narrow to the wide pronunciation of their first elements; and the same applies also, though less stringently, in the case of elocution. And then we can go a step further, and restore an extinct, or introduce a dialectal pronunciation, as when the Germans insist on the point-trill *r* instead of the back sound, which is now universal in educated German speech. The German elocutionists follow the singers in theory, but not always in practice; in fact, the point-*r* is intolerable in any German declamation which is at all colloquial in subject. The difficulty with this is to know where to stop. If the elocutionists followed the singers in substituting the Italian *a* for *æ*, why not go a step further, and get rid of the still uglier vowel in *come* by returning to the older pronunciation and restoring the full *u*? If this kind of thing were carried out consistently, the result would be a language which in many respects would be better than the existing English—but it would no longer be English; it would hardly be intelligible. And even if the changes stopped far short of this, they would still give the impression of unreality and insincerity which always accompanies artificiality.

227. But we must not go to the other extreme of insisting on the retention of the colloquial pronunciation in all elocution without regard to differences of subject and style. It is not only in poetry that the retention of the shortened forms of colloquial speech is often impossible; these forms would often produce an equally jarring, incongruous, or even ludicrous effect in elevated prose, free as it is from the constraint of metre. Foreigners who begin with going to the other extreme of saying it is *ei fain dei tuwdei* when

they have once practically mastered the principles of gradation, and have learnt to obscure the weak vowels in a more or less natural manner, often make their pronunciation still more uncouth than before when they stand up to deliver a formal address—perhaps even to preach a sermon!—full of *ain'ts* and *shan'ts*. Some of them at least become more colloquial than the natives, and invent weak forms of their own.

Thus I knew one who pronounced *Norwegian knapsack* as *næwiidgæn næpsæk*.

228. But nothing can shake the fundamental principle that all elocution, however far removed it may be from the language of ordinary life, must be based ultimately on it.

229. It is not, strictly speaking, the business of the elocutionist to teach this pronunciation, although he must insist on his pupils possessing the natural pronunciation of the standard dialect as the indispensable preliminary to systematic study. It is not enough that they should be able to speak it as a foreign language side by side with their native dialect: it must supersede and supplant the latter so completely that the standard form of colloquial speech becomes habitual to them in everyday conversation, so that they speak it without effort and without thought. The only way to attain this is to study phonetics under a competent teacher who himself speaks the standard dialect, to fix the sounds permanently and accurately in the memory by extensive reading of phonetic texts, and then to make it all into a second nature by constant intercourse with educated undialectal speakers.

230. Of course, as already remarked, a dialectal speaker may be as good an elocutionist as one who speaks the standard language; but only in his (the dialectal speaker's) own dialect: for no one can speak two dialects with equal ease

and naturalness ; and the more alike the two dialects are, the more difficult it is to keep them apart. He must therefore choose his dialect and stick to it. The choice will generally depend on the outward circumstances of his life. Thus a Scotchman or Irishman settling permanently in London as a lecturer or preacher will naturally try to get completely rid of his native dialect, not because he thinks it inferior in itself to the standard dialect, but simply because it is out of place, and cannot be kept up in its original purity if exposed constantly to the influence of another dialect.

231. Such a one will, if he acquires a perfectly easy and accurate command of the standard colloquial dialect, be at an advantage compared with the native speakers of the latter in that he necessarily speaks it in a somewhat idealized form : a little more carefully, and with completer freedom from local colouring and vulgarisms.

This, then, is the foundation.

232. The next principle is, not to depart from this easy, natural pronunciation, except where there is a special reason for so doing.

233. If we distinguish generally between a lower and a higher style of pronunciation, the latter characterized mainly by a more frequent use of full, strong sounds and forms, the question now is to determine the conditions which make the latter necessary.

The most definite requirements are those of poetic form.

234. In the first place, we must in every case adopt a pronunciation which will preserve the syllables intact : even in the most colloquial verse we must occasionally substitute it *iz* for *it s*, even at the risk of marring the colloquial effect ; the responsibility for this falls on the poet, not on the reciter.

235. Rime need not, and, indeed, cannot be taken so seriously as metre. No one would think of attempting to

make such 'printer's rimes' as *lev*, *grouv*, *pruuv*—which are, however, for the most part really traditional rimes—into real rimes; while every one, on the other hand, would as unhesitatingly substitute any pronunciation that actually exists, however unfamiliar it may be to him, in order to make a perfect rime, or even only a nearer approximation to it, unless, of course, it calls forth ludicrous or otherwise objectionable associations; in which case he would not hesitate to leave the rime imperfect. With such rimes as *wind—find*, it is usual to employ the obsolete pronunciation *waind*; but it would be quite legitimate, and to many ears it would have a more natural and better effect to leave the rime imperfect by keeping the present pronunciation. To pronounce *waind* everywhere in poetry and poetical prose is an unpleasant affectation, which must be condemned on the general principle of avoiding all unnecessary alterations of colloquial pronunciation. So also with *hover—cover*.

236. The question, how far the metre ought to be brought out at the expense of sense and expression is a more difficult one.

The initial difficulty here is that no one knows what English metre is. Many think they know; but, unfortunately, no one else shares that belief: there is no generally accepted theory of English verse. It is not only that theorists of different schools disagree. Even those who are agreed, for instance, that English verse is quantitative and capable of being expressed, like music, in terms of bar and crotchet, seldom agree in the details of their analysis. And it is not a mere question of theory: there is no agreement as to the facts themselves.

237. This is the real difference between the metres of English and those of the classical languages. English metre is as much founded on stress (*ictus*) and quantity (length of vowels and syllables) as that of Greek and Latin.

But while in these the language itself supplies—with very few exceptions—a definite and undisputable succession of longs and shorts, this is not the case in such a language as English, as any one may soon find out by trying to construct verses in strict accordance with the rules of classical prosody. Not that the natural quantities of the language are without influence on the character of English verse; but the ignoring of them, although it may make the verse less harmonious and pleasant to the ear, does not definitely destroy its structure: there are in English no words the quantity of whose syllables makes it impossible to use them in certain metres, as is the case in the ‘quantitative’ metres *par excellence* of Greek and Latin, and, up to the present day, of Arabic and Persian. An inevitable result of the strict dependence of verse-quantity on the natural quantities of the language in these metres is that the natural stresses of the language have to be sacrificed to the verse-ictus, the result being what appears to us an intolerable monotony and want of expression. It is this which has no doubt led to the substitution of the stress basis in all modern European metres: the verse-ictus follows the natural stress—with consequent more or less complete ignoring of the natural quantities—not only in English, but also in those languages which, like Finnish and Hungarian, would lend themselves to strictly quantitative metres as well, or even better, than Greek and Arabic. Again, there are metrical systems, such as that of Old French, in which the natural language supplies to the metre only a fixed number of syllables for each line, the natural stresses as well as the natural quantities being completely ignored by the poet.

238. We must begin therefore with realizing that English verse has no definite laws of form consciously followed by its makers. If it has laws of quantity, they are so vague that no one has yet been able to formulate them; even the correspondence between ictus and stress is not always

observed ; the number of syllables, though more restricted in some of our metres than in others, is never absolutely fixed ; even our rimes are not always perfect, although to the child and the rustic verse without rime is not verse at all.

239. Hence the same verse may often be read in a variety of ways—not only with marked differences of quantity, but with shiftings of stress and varying number of syllables ; and each of these readings may be as good as any of the others—except from the point of view of some metrical faddist, who may be directly contradicted by another of his own school.

240. This vagueness of structure is not a mere accident or defect of modern metres : it is required by the hearer and deliberately aimed at by the poet. To both of them the continued strict repetition of such a metrical scheme as that of our heroic verse

u | - u | - u | - u | - u | -

would be intolerable. And the variations in quantity and the distribution of pauses which would have contented a Greek ear would still leave the verse too monotonous for a modern hearer. The modern ear demands not only variety, but irregularity—one might almost say, licence—within certain limits ; these limits, again, being as vague and subjective as everything else in modern metre. And yet the ideally regular standard is always present in the background of our consciousness : the poet plays round it, departs continually from it, but does not stray beyond a certain distance, and every now and then he emphasizes his freedom by momentarily submitting to the yoke of strict form.

241. It follows from this that the more modern, the more advanced the poet is, the freer his verse will be ; and the same applies to its interpretation by the reader or reciter.

In the naïve recitation—the ‘routine scansion’—of chil-

dren and the uneducated everything is sacrificed to metrical regularity, as it still is in the quantitative verse of the East, the recitation of which is, as has been already observed, absolutely devoid of expression. Although the metres of our Chaucer are freer than this, they are not so free as those of Shakespeare and Modern English generally; for instance, Chaucer's verse shows an unmistakable repugnance to irregularity in the number of syllables—in which it no doubt follows French verse—and that clash of strong stresses which brings Modern English verse a step nearer to prose, while adding greatly to its power of expression.

242. The tendencies of the modern elocutionist are in harmony with this development. Not content with avoiding routine scansion, he often goes out of his way to make the metrical structure irre recognizable—or, at least, to disguise it. This revolt against form is carried to an extreme in the French recitation of the rimed verse of their seventeenth-century tragedians, in which the metre is not merely disguised, but absolutely destroyed by the omission of the 'mute *e*', even the rimes being slurred over as much as possible.

243. This is all wrong. If we read a poet in the original form, and not in a translation or modernization, we are bound to carry out his intentions: if he arranges his words with the evident object of producing certain effects of metre, such as rime and alliteration, we are bound to read his verse in such a way that his trouble shall not be wasted.

244. The first thing, therefore, is to form a clear idea of the intentions of the poet. If he writes with the declared object of producing something between verse and prose, we must either read accordingly, or let him alone. If, like a Greek poet, he constructs his verse in such a way as to be unmeaning without the interpretation of routine scansion, and a—to us intolerable—sacrifice of expression, we must gradually train our dull ears to recognize the infinite variety

which underlies this seeming monotony. With our own Chaucer we do not require this training : our ears recognize at once the happy medium that he attains between the smooth formality of the ancients and the licence of the modern impressionist verse-maker.

245. With most of our modern poets we have then to recognize that they are at least resigned to hear us subordinate form to expression, metrical to rhetorical stress in declaiming their verse ; while, on the other hand, we may be sure that they would be as much disappointed if they heard us deliberately destroy any formal effects they had taken trouble to create, as Clementi or Mozart would be if they heard a modern virtuoso omit any of the trills and other ornaments of which they make what may appear to a modern ear too lavish a use.

246. The first principle from this point of view is that form should be indicated, but, as a general rule, as unobtrusively as possible, except where some unexpected effect requires to be prominently brought out, like a discord in music ; which, if feebly attacked, becomes unmeaning. All force, in particular, should be preserved as much as possible for the expression of logical and emotional emphasis. When the metre and general structure of the poem have been clearly brought out by the reciter in the first few verses, it is often allowable to carry the repression of the form still further—to approximate the verse still further to prose. The extent to which this is carried depends partly on the character of the piece, partly on the temperament and taste of the reciter.

247. The limits of the concessions made to sense and expression can hardly be defined more definitely than by stating the general principle : keep the metre if you can, and if you know what it is ; if that is impossible, keep some metre. In other words, abstain from everything that jars on the ear, unless it is necessary in order to make the verse

intelligible as such. The end of the line, in particular, should always be clearly indicated, if not by a pause, by a more or less marked lengthening of the final syllable.

248. The nature of English verse makes hesitation and compromise inevitable in its recitation. Even the most experienced reader can hardly avoid an occasional stumble with such artificial metres as those of *Evangeline* and *Locksley Hall*: he simply breaks down in the middle of the line, and has to make a fresh start, perhaps only to break down again.

We must therefore distinguish between cacophony which is the fault of the reciter—the result of defective interpretation on his part—and that which is the fault of the poet, and for which the reciter is not responsible. All that the latter can do with the want of metre in such a poem as *The Grammarian's Funeral* is to smooth it over as much as possible.

We now have to consider the conditions, apart from poetical form, which make it necessary to substitute a higher for a lower style of pronunciation.

249. The most important of these is speed. Even in ordinary conversation, slow, deliberate speech necessitates, or at any rate allows of, a much freer use of strong forms such as *send* where they would be quite out of place in quick speech.

250. But it is not generally a mere question of speed. We feel also that weak and clipped forms are often incompatible with the gravity and dignity with which slow speech is naturally associated. Even in the most elevated poetry we may constantly drop the weak *h* in such words as *his* and *him*, and then we may come to a passage where there is no emphasis, ictus, or pause—perhaps not even a slackening of speed—to suggest the substitution of the strong form; and yet the artistic instinct may imperatively demand it. So also even in familiar prose such forms as *it's* and *can't*

may jar on our ear so decidedly that we must perforce substitute the full forms, even when they sound stilted or even positively unnatural: we deliberately prefer this extreme to the other extreme of triviality and vulgarity.

251. Pauses, which are naturally associated with slowness and solemnity, also bring with them full, strong forms. The good elocutionist is always sparing in the use of pauses, so as to be able to introduce them with all the more effect when really required.

252. It is in emphasis and sentence-stress, as well as in intonation, that the importance of basing elocutionary on colloquial usage is most clearly evident. Whenever the student is in doubt as to the natural expression to be given to some high-flown passage in purely literary language, he should paraphrase it into the nearest colloquial form, no matter how homely and incongruous it may seem, and then transfer the general effect to the passage in question. In this way he will avoid exaggeration and unreality on the one hand, monotony and mechanical repetition of types of expression on the other.

253. But even here we cannot always afford to be perfectly natural. There are passages both in prose and poetry, whose length, complexity of grammatical structure, or obscure, archaic diction—or all these together—make them unintelligible to the ear unaided by the eye if spoken on the basis of normal colloquial synthesis. If, then, an exaggerated, or even downright false emphasis or intonation—a falling tone after a comma to detach, a rising tone after a full stop to connect—will make the passage intelligible, we must not hesitate to employ it; for the fault here is not with the interpretation, but with the text itself.

TEXTS

254. The phonetic transcriptions of Modern English texts which follow are given only as specimens of a natural as opposed to an artificially normalized pronunciation, and are not intended to serve as a rigorous standard of correct speech—a standard which in our present state of knowledge it would be impossible to set up; they are intended rather to serve as examples of the facts and principles already stated, and as material for practice in the use of a phonetic notation.

Strong Forms.

255. One, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve. First, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, eleventh, twelfth. Two-thirds, three-fourths, four-fifths, five-sixths, six-sevenths, seven-eighths, nine-tenths, eleven-twelfths.

January, February, March, April, May, June, July, August, September, October, November, December.

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.

Spring, summer, autumn, winter. North, south, east, west. Years, months, weeks, days, hours, minutes, seconds.

Weak Forms.

256. I intend to go to Ireland at the end of the year.

What is that? Where does it come from? It comes from Germany. What is it made of? Is it made of leather? No, it is made of cloth. No, it is not: it is made of paper! I tell you, it is *not* made of paper; it *is* made of cloth.

When I got there, there was no one there.

We had better go at once; there is no time to lose. Yes, I think we had.

Was he at church this morning? I suppose he was, but I am not sure; I did not see him. He was there last Sunday.

Where is it? It is here; at least I think it is. Yes, here it is.

I hope it will be fine to-morrow. I am afraid it will not: I expect the weather will not be settled for some time yet.

Shall you be there too? I hope I shall; but I am afraid I shall not have time.

We have had to have the house painted. It has not been

strong form.

255. wan, tuw, prij, fə(ə), faiv, siks, sevn, eit, nain, ten, ɪlevn, twelv. feəst, sekənd, peəd, fəp, fɪf, sɪksp, sevnɪp, eitp, nainɪp, tenɪp, ɪlevnɪp, twelfp. tuw peədz, prij fəps, fə fɪfɪps, faiv sɪksɪps, siks sevnɪps, sevn eitɪps, 5 nain tenɪps, ɪlevn twelfɪps.

dʒænjʊəri, febrʊəri, maʊtʃ, eɪprəl, mei, dʒuwn, dʒʊwlaɪ, ɒɡəst, septembə, ɒktəubə, nəʊvembə, dɪsembə.

sandɪ, mandɪ, tʃuɪwzdɪ, we(d)nzdɪ, peədɪ, fraɪdɪ, sætədɪ. 10

sprɪŋ, same(r), ɒtəm, wɪntə. nəp, saʊp, ɪjst, west. ʃiəz, manɪps, wɪjks, deɪz, əwəz, mɪnɪts, sekəndz.

weak form.

256. əɪ ɪntend tə :ɡou tʊ ;aɪələnd et ðɪ end ə(v) ðə ʃiə.

:whot s ðæt? :wheə deɪz ɪt kəm frəm? ɪt :kəmz frəm dʒəməni. :whot ɪz (or s) ɪt meɪd əv? :ɪz ɪt :meɪd əv leðə? nou', ɪt s :meɪd əv ;klɒp. nou', ɪt s not : ɪt s :meɪd 5 əv ;peɪpə! əɪ tel ʃʊ, ɪt s ;not :meɪd əv peɪpə ; ɪt ;ɪz :meɪd əv klɒp.

-when əɪ got -ðə, ðə weɪz nouwən ðə.

wɪ d beɪtə :ɡou et ;wans :ðəz nou taɪm tə luwz. ʃes', əɪ pɪŋk wɪj hæd. 10

-wɒz (weɪz) ɪj et tʃeətʃ ðɪs :məniŋ? əɪ səpəʊz ɪj :wɒz, beɪt əɪ m not ʃue ; əɪ :dɪd nt sɪj ɪm. hɪj weɪz ðə ;laast sandɪ.

:wheə ɪz ɪt? ɪt s hɪə ; et :lɪst əɪ ;pɪŋk ɪt :ɪz. ʃes', hɪə ɪt ɪz. 15

əɪ :həʊp ɪt l bɪ(j) faɪn te:morə(u). əɪ m əfreɪd ɪt wəʊnt : əɪ ɪk:spekt ðə weðər əl not bɪ setld fə sam taɪm ʃet.

ʃəl juw bɪ ðə tuw? əɪ həʊp əɪ -ʃəl'; beɪt əɪ m əfreɪd əɪ ʃaant (or əɪ ʃəl not) -hæv taɪm.

wɪj v hæd tə :hæv ðə ;haus :peɪntɪd. ɪt hæznt blɪŋ 20

done for a long time : it has been put off too long. Better late than never.

I went to him and told him of it. He said he would send for it at once.

Advantages of Phonetics.

257. The first and most evident advantage of phonetics is the independence it gives us. In the first place, it makes us independent of residence abroad. Even if the learner intends to go to the country where the language is spoken, it is a great advantage to him to start with a thorough practical knowledge of the sounds in which he is to practise himself.

Secondly, phonetics makes us independent of native teachers. It is certain that a phonetically trained Englishman who has a clear knowledge of the relations between French and English sounds can teach French sounds to English people better than an unphonetic Frenchman—still more, an unphonetic Belgian, Swiss, or Pole—who is unable to communicate his pronunciation to his pupils, and perhaps speaks a vulgar or dialectal form of French himself.

Again, phonetics enables an intelligent adult to get a sound elementary knowledge of the sounds of a foreign language without any help from outside—that is, if he has an adequate phonetic analysis and transcription to work with.

But the gain of a phonetic grasp of a language extends far beyond such special considerations. A secure grasp of the sounds of a language is a great strengthening of the mastery of its forms and meanings. A minute discrimination of similar sounds in closely allied languages is the surest safeguard against otherwise inevitable confusions.

Hence also the literary and aesthetic use of phonetics. Phonetics alone can breathe life into the dead mass of letters which constitutes a written language ; it alone can bring the rustic dialogues of our novels before every intelli-

:dan fər ə lɒŋ :taɪm: ɪt s bɪjn put əf tuw lɒŋ. betə
leit ðən nevə.

əi :went tʊ ɪm ən təuld ɪm əv ɪt. hɪj :sed ɪj d send
fər ɪt et wans.

ədvaantɪdʒɪz əv fəʊnetɪks

257. ðə fəest ən moust evɪdɪnt ədvaantɪdʒ əv fəʊnetɪks ɪz
ðɪ ɪndɪpendəns ɪt :gɪvs əs. ɪn ðə fəest -pleɪs, ɪt :meɪks
əs ɪndɪpendənt əv rezɪdəns əbrəd. ɪjvɪn ɪf ðə ləənər
ɪntendz tə ɡəʊ tə ðə kəntrɪ -wheə ðə ləŋɡwɪdʒ ɪz spəʊkn, 5
ɪt s ə greɪt ədvaantɪdʒ tʊ ɪm tə stɑ:t wɪð ə pərə
præktɪkl nɒlɪdʒ əv ðə saʊn(d)z ɪn :waɪtʃ ɪj (ɪ)z tə præk-tɪs
ɪm-self.

sekəndli, fəʊnetɪks :meɪks əs ɪndɪpendənt əv neɪtɪv
tɪtʃəz. ɪt s seətn ðət ə fəʊnetɪkəl tɹeɪnd ɪŋɡlɪʃmən 10
ʊw -hæz ə klie nɒlɪdʒ əv ðə rɪleɪʃnz bɪ:twaɪn frɛnʃ ənd
ɪŋɡlɪʃ saʊndz kən tɪtʃ frɛnʃ saʊndz tʊ ɪŋɡlɪʃ :pɪpəl betə
ðən ən ən-fəʊnetɪk frɛnʃmən—stɪl məə, ən ən-fəʊnetɪk
beldʒən, swɪs, -ə pəʊl—hʊw z ən'eɪbl tə kəmju:nɪkeɪt ɪz
prənɑ:nsi'eɪʃən tʊ ɪz pju:plz, ən præps spɪjks ə vɑ:lɡər ə 15
deɪələktəl fɔ:m əv frɛnʃ ɪmself.

egen', fəʊnetɪks ɪneɪblz ən ɪntelɪdʒənt sədalt tə :ɡet ə
saʊnd elɪ'ment(ə)rɪ nɒlɪdʒ əv ðə saʊndz əv ə fɔ:rɪn ləŋɡwɪdʒ
wɪðaut ənɪ help frəm 'aʊt'saɪd'—ðæt ɪz, :ɪf ɪj -(h)æz ən
sədɪkwɪt fəʊnetɪk ənəlɪsɪs ən tɹæn'skrɪpʃən tə week wɪð. 20

bet ðə ɡeɪn əv ə fəʊnetɪk ɡraasp əv ə ləŋɡwɪdʒ ɪks:təndz
faa bɪ:jɒnd -sɑ:tʃ spɛʃəl kɒnsɪdə'reɪʃnz. ə sɪkjue ɡraasp
əv ðə saʊndz əv ə ləŋɡwɪdʒ ɪz ə greɪt strɛŋθ(ə)nɪŋ əv ðə
maast(ə)rɪ əv ɪts fɔ:mz ən mɪjɪnɪŋz. ə mɪnjuwt dɪskrɪmɪ'neɪʃən
əv sɪmɪlə saʊndz ɪn kləʊslɪ əlaɪd ləŋɡwɪdʒɪz ɪz ðə fʊərɪst 25
seɪfɡaəd ə:ɡenst əðəwaɪz ɪnevɪtebl kɒnfju:ʒənz.

hens :əlsəʊ ðə lɪtərərɪ ənd ɪjspetɪk ju:ws əv fəʊnetɪks.
fəʊnetɪks əloun kən brɪjð laɪf ɪntə ðə ded məs əv
lətəz waɪtʃ kɒnstɪtju:wtz ə rɪtn ləŋɡwɪdʒ; ɪt əloun kən
:brɪŋ ðə rɑ:stɪk daɪələɡz əv əue nəvɪz bɪ-fɔ:r evrɪ ɪntelɪ- 30

gent reader as living realities, and make us realize the living power and beauty of the ancient classical languages in prose and verse.

Phonetics is not merely an indirect strengthener of grammatical associations, it is an essential part of grammar itself.

A knowledge of sentence-stress and intonation is not only an essential part of elocution and correct pronunciation, but is also an integral part of the syntax of many languages.

In short, there is no branch of the study of language which can afford to dispense with phonetics.

The Fine Arts.

258. Because the soul is progressive, it never quite repeats itself, but in every act attempts the production of a new and fairer whole. Thus, in our Fine Arts, not imitation, but creation is the aim. In landscape, the painter should give the suggestion of a fairer creation than we know. The details, the prose of Nature, he should omit, and give us only the spirit and splendour. Valuing more the expression of Nature than Nature herself, he will exalt in his copy the features that please him. He will give the gloom of gloom and the sunshine of sunshine.

Politeness.

259. As to politeness, many have attempted its definition. I believe it is best to be known by description, definition not being able to comprise it. I would, however, venture to call it benevolence in trifles, or the preference of others to ourselves in little, daily, hourly occurrences in the commerce of life. A better place, a more commodious seat, priority in being helped at table—what is it but sacrificing ourselves in such trifles to the convenience and pleasure of others? And this constitutes true politeness. Bowing,

dgənt rijder ɛz livɪŋ rɪ(j)æltɪz, ɛn :meɪk ɛs rɪəleɪz ðə livɪŋ
paʊər ɛn bjuwɪ ɛv ðɪ ɛɪnfənt klæsɪkl læŋgwidʒɪz ɪn prəʊz
ɛn vɛəs.

fəʊnetɪks ɪz nɒt :miəlɪ ɛn ɪndɪ'rekt strɛŋp(ə)nər ɛv
grɛmətɪkəl əsəʊs'eɪfənz, ɪt s ɛn ɪsɛnfəl paat ɛv græməz 35
ɪtsɛlf.

ə nɒlɪdʒ ɛv sɛntənsstres ɛnd ɪntəʊ'neɪfən (ɪ)z nɒt
:əʊnli ɛn ɪsɛnfəl paat ɛv ɛlə'kjuwʃən ɛn kərəkt prənəns'eɪ-
fən, bɛt ɪz :ɔlsəʊ ɛn ɪntɪgrəl paat ɛv ðə sɪntæks ɛv mɛnɪ
læŋgwidʒɪz.

40

ɪn ʃɒt, ðə z nəʊ brɑːns ɛv ðə stɑːdɪ ɛv læŋgwidʒ wɪtʃ
kən əfəd tə dɪspens wɪð fəʊnetɪks.

ðə fain aats.

258. bɪkɒz ðə səʊl ɪz prɛgrɛsɪv, ɪt nəvə kwɑɪt rɪpɪʃts
ɪt-sɛlf, bɛt ɪn ɛvri ækt ətɛmpts ðə prɛdæksən ɛv ə njuw
ɛn fɛərə haʊl. ðas, ɪn əʊə fain aats, nɒt ɪm'ɪteɪfən,
bɛt krɪ'eɪfən ɪz ðɪ ɛɪm. ɪn lænsk(ə)ɪp, ðə pɛɪntə ʃɛd 5
:gɪv ðə sɛdʒɛstʃən ɛv ə fɛərə krɪ'eɪfən ðɛn wɪj nəʊ. ðə
dɪʃteɪlz, ðə :prəʊz ɛv nəɪtʃə, hɪj ʃɛd əʊmɪt (or ɛmɪt)', ɛn :gɪv
əs əʊnli ðə spɪrɪt ɛn splendə. vɛljʊɪŋ mə(ə) ðɪ ɪk:sprɛʃən
ɛv nəɪtʃə ðɛn nəɪtʃə hɛə'sɛlf, hɪj wɪl ɪgzɒlt ɪn ɪz kɒpɪ ðə
fɪʃtʃəz ðət plɪʒ ɪm. hɪj wɪl :gɪv ðə gluwɪm ɛv gluwɪm 10
ɛn ðə sənfaɪn ɛv sənfaɪn.

pəlaitnɪs.

259. :æz tə pɛ:laitnɪs, mɛnɪ ɛv ətɛmtɪd ɪts defɪ'nɪʃən.
əɪ bɪ:lɪv ɪt s bɛst tə bɪ nəʊn beɪ dɪ:skrɪpʃən, defɪ'nɪʃən
nɒt -bɪjɪŋ ɛɪbl tə kɛmpraɪz ɪt. əɪ wʊd, (h)əʊ:ɛvə, :vɛntʃə
tə :kɒl ɪt bɪ:nɛvələns ɪn :traɪfɪz', əʊ ðə prɛf(ə)rɛns ɛv əðɛz 5
tʊ əʊəsɛlvz ɪn lɪtl, deɪlɪ, əʊəlɪ ɛkərənsɪz ɪn ðə kɒm-
ɛəs ɛv laɪf. ə bɛtə pleɪs, ə :mɛə kɛməʊdʒɛs sɪʃt, prɛɪərɪtɪ
ɪn -bɪjɪŋ hɛlpt ət teɪbl—wɒt :ɪz ɪt bɛt sækɪfaɪzɪŋ
əʊə-sɛlvz ɪn sətʃ traɪfɪz tə ðə kɛnvɪjɪŋjɛns ɛn pleʒər
ɛv əðɛz? ɛn :ðɪs :kɒnstɪtjuwts truw pəlaitnɪs. bəʊɪŋ, 10

ceremonies, formal compliments, stiff civilities will never be politeness ; that must be easy, natural, unstudied, manly, noble. And what will give this but a mind benevolent and perpetually attentive to exert that amiable disposition towards all you converse and live with? Benevolence in great matters takes a higher name, and is the Queen of Virtue.

The Burial of Sir John Moore.

260. Not a drum was heard, not a funeral note,
As his corpse to the rampart we hurried ;
Not a soldier discharged his farewell shot
O'er the grave where our hero we buried.
We buried him darkly at dead of night,
The sods with our bayonets turning ;
By the struggling moonbeam's misty light
And the lantern dimly burning.
No useless coffin enclosed his breast,
Not in sheet nor in shroud we wound him ;
But he lay like a warrior taking his rest
With his martial cloak around him.
Few and short were the prayers we said,
And we spoke not a word of sorrow ;
But we steadfastly gazed on the face that was dead,
And we bitterly thought of the morrow.
We thought, as we hollowed his narrow bed,
And smoothed down his lonely pillow,
That the foe and the stranger would tread o'er his head,
And we far away on the billow !
Lightly they'll talk of the spirit that's gone,
And o'er his cold ashes upbraid him ;
But little he'll reck if they let him sleep on
In the grave where a Briton has laid him.

serimēnɪz, fəml kɒmplɪmənts, stɪf sɪvɪlɪtɪz wɪl nəvə -bɪj
pələɪtnɪs; ðæt məs(t) bɪj ɪjzɪ, nətʃərəl, 'an'stædɪd, mənli,
nəubl. en :whot wɪl -gɪv ðɪs bət ə maɪnd bɪnəvelənt
ən pepətʃʊəli etentɪv tʊ ɪgːzæet -ðæt eɪnɪjəbl dɪspəˈzɪʃən
tɒdz (or təwɒdz) əl dʒʊ(w) kənveəs ən lɪv wɪð? bɪnəveləns ɪs
ɪn ;greɪt :mæteɪz :teɪks ə haɪə :neɪm', ɛnd ɪz ðə ;kwɪjn əv
væetʃʊ.

ðə berɪəl əv -sæə dʒɒn muə.

260. :not ə ;dram wəz həəd, :not ə fjuwnərəl nout,
-æz ɪz kɒps tə ðə ræmpaət wɪj hærɪd;
:not ə souldʒə dɪstʃaɪdʒd (h)ɪz fiəwəl fɒt
:ə ðə greɪv -wheər əwe hɪərəu wɪj berɪd. 5
- wɪj berɪd ɪm daaklɪ et ded əv naɪt',
ðə sɒdz wɪð əwe beɪənɪts təənɪŋ;
beɪ ðə straglɪŋ muwnbɪjɪmz mɪstɪ laɪt
ən ðə læntən dɪmlɪ beənɪŋ.
- :nou juwslɪs kɒfɪn ɪnklouzd ɪz brest, 10
:not ɪn fɪt nəʊr ɪn fraʊd wɪj waʊnd ɪm;
bət ɪj lei leɪk ə wɒrɪə :teɪkɪŋ ɪz rest
wɪð ɪz mæʃəl klouk ɛraʊnd ɪm.
- fjuw ən fɒt we ðə preez wɪj sed,
ən wɪj spouk :not ə weəd əv :sɒrəu; 15
bət wɪj stɛdʃestlɪ geɪzd ɒn ðə feɪs ðæt wəz ded,
ən wɪj ;bɪtəlɪ pɒt əv ðə mɒrəu.
- wɪj pɒt, əz wɪj hɒldʊd ɪz nəʊrəu bed,
ən smuwɒd :daʊn hɪz ləʊnlɪ pɪləu,
ðæt ðə fou ən ðə streɪnʒə wʊd tred -ɔr ɪz hed, 20
ɛnd ;wɪj :faər əwei ɒn ðə bɪləu!
- laɪtlɪ -ðeɪ l tɒk əv ðə spɪrɪt ðæt s ɡɒn,
ɛnd :ɔr ɪz kəʊld əʃɪz əpˈbreɪd ɪm;
bət lɪtl hɪj l rek :ɪf -ðeɪ let ɪm :slɪjp ɒn
ɪn ðə greɪv -wheər ə ;brɪtn əz leɪd ɪm. 25

But half of our heavy task was done

When the clock struck the hour for retiring ;
And we heard the distant and random gun
That the foe was sullenly firing.

Slowly and sadly we laid him down,

From the field of his fame fresh and gory ;
We carved not a line, and we raised not a stone—
But we left him alone with his glory.

She walks in beauty.

261.

She walks in beauty, like the night

Of cloudless climes and starry skies ;
And all that's best of dark and bright
Meet in her aspect and her eyes :
Thus mellowed to that tender light
Which heaven to gaudy day denies.

One shade the more, one ray the less

Had half impaired the nameless grace
Which waves in every raven tress,
Or softly lightens o'er her face ;
Where thoughts serenely sweet express
How pure, how dear their dwelling-place.

And on that cheek, and o'er that brow,

So soft, so calm, yet eloquent,
The smiles that win, the tints that glow,
But tell of days in goodness spent,
A mind at peace with all below,
A heart whose love is innocent.

:bat ;haaf ev eue hevɪ taask wez dan
 -when ðe klok :strak ði aue fe ɹɪtaɪərɪŋ;
 end wɪj heəd ðe distənt ən rændəm gan
 ðet ðe fou wez salɪnli faɪərɪŋ.

slouli ən sædli wɪj leid ɪm daun, 30
 frəm ðe fɪld ev ɪz feɪm freʃ ən gɔrɪ;
 wɪj kaavd :not ə laɪn, end wɪj reɪzd :not ə stoun' —
 bət wɪj lef ɪm əloun wɪð ɪz glɔrɪ.

fɪj wɔks ɪn bjuwtɪ

261. fɪj wɔks ɪn bjuwtɪ, :laɪk ðe naɪt
 ev klaudlɪs klaimz ən staaɪ skaɪz;
 end əl ðet s best ev daak ən braɪt
 mɪjt :ɪn (h)ɔər əspekt -ænd heər aɪz: 5
 :ðas meləʊd -tuw -ðæt tendə laɪt
 whɪtʃ hevn tə gɔdɪ dei dɪnaɪz.
 wan feɪd ðe mʊə, wan rei ðe les
 -hæd haaf ɪmpeəd ðe neɪmlɪs greɪs
 whɪtʃ weɪvz ɪn evrɪ reɪvn tres, 10
 -əə sɔftli laɪtnz :əə -həə feɪs;
 -whee pɔts sɪrɪjnlɪ swɪjt ɪkspres
 -hau pjue, -hau diə -ðee dwelɪŋpleɪs.
 end :on -ðæt tʃɪjk, end :əə -ðæt brau,
 -sou sɔft, -sou kaam, -jet ələʊkwent, 15
 ðe smailz ðet wɪn, ðe tɪnts ðet glou,
 bət tel ev deɪz ɪn gʊdnɪs spent,
 ə maɪnd ət pijs wɪð əl bɪlou,
 ə haat -hʊwz lav ɪz ɪnəsnt.

PHONOLOGY

262. Phonetics is the science of speech-sounds and the art of pronunciation. From this point of view it is a purely descriptive science.

263. But the sounds of language—like language itself—can also be regarded from the historical point of view.

Thus, after describing and classifying the sounds of such a language as Modern English, we may go on to study their history. In dealing with the phonetic structure of English from the descriptive point of view we have already had occasion to trace back the history of some of our sounds to the Middle English period. In § 191 foll. we have in this way been able to find the origin—to point out the older forms—of the vowel *æ*, and also to explain the phonetic changes which gave rise to it. This is phonology: the science of sound-changes, of the history and development of the sounds, first of special languages, and then of language in general. The history of the English vowels is a special department of historical phonology.

264. If after tracing the vowels of Modern English back to the Old English period, we then go on to compare the Old English vowels themselves with those of the cognate Germanic languages—Dutch, German, Icelandic, Gothic, &c.—so as to determine the vowel-sounds of the prehistoric Parent Germanic language from which all these were developed, each by special changes of its own, historical expands into comparative phonology. So also there is a still wider comparative phonology of the Aryan languages—Germanic, Greek, Latin, Sanskrit, &c.—by which we are able

to determine with more or less certainty the vowel-system of Parent Aryan.

265. Then at last we arrive at the conception of general phonology, which emancipates itself from the limits of any one language or group of languages, and deals with such questions as : Why are the sounds of every language liable to change from generation to generation ? Are these changes the result of defective imitation of the speech of the parents by the children, or of imperceptibly gradual shiftings of the organic positions by which the sounds are produced ? What is the influence of other, more external factors, such as acoustic imitation, or analogy ? What is the influence of race or climate, if any ? Are sound-changes the result of economy of exertion and laziness, of striving after greater distinctness of expression ? and so on.

266. Phonology is, therefore, a speculative science, dealing largely with more or less probable hypotheses.

267. Nevertheless, we can often determine the pronunciation of dead languages with almost complete certainty, at least as regards the general character of the language—so as to be able, for instance, to give a Broad Romic transcription of Middle English and Latin pronunciation—and often with minute accuracy of detail.

268. In this we are guided by a variety of evidence : sound-classifications and descriptions of sounds by contemporaries ; their comparisons with the sounds of other languages ; phonetic transcriptions, or transcriptions in a foreign orthography, whose evidence is the more valuable the more phonetic the orthography and the less the changes that the sounds have undergone, as when we find English *come* transcribed *cwm* by a Welshman in the sixteenth century ; the spelling itself, especially when it changes, as when the Old English high-front-round vowel *y* is expressed in Early Middle English orthography by the French *u* ; metre and rime, puns, &c. ; comparison

by the investigator with the sounds of cognate languages and dialects ; general laws of sound-change. It must also be borne in mind that individual sounds may be kept unchanged for thousands of years : thus it is certain that the English *w* had the same sound in Old English as it has now, the contrary hypothesis being, indeed, inconceivable ; and also that this was the sound it had not only in Parent Germanic but also in Parent Aryan. It will easily be understood that the cumulative force of a number of independent proofs is often irresistible. Thus the pronunciation of Old English *y* is further confirmed by the facts (1) that it already had the same sound in Latin, which we can prove by a variety of independent arguments, and (2) that *y* has the same sound to the present day in Danish and Swedish, whose orthographies borrowed it from Old English.

STUDY OF GENERAL PHONETICS

269. In the preceding sections the student has been taught how to prepare himself for the study of sounds in general by learning to discriminate, symbolize, isolate, and analyse those of his own language.

Even in this elementary stage we cannot ignore general phonetics: we cannot understand the English vowels without considering their relations to the whole scheme of possible vowels.

But so far, general phonetics has been only a means to an end: its principles and its details have been adduced only in as far as they explain the phonetic structure of English.

270. And it is possible to stop short here. Those who study phonetics solely as a preparation for English elocution will naturally do so.

The singer, on the other hand, will in most cases aim at acquiring a practical command of at least the Italian and German sounds. But although his range will be a wider one, it need not extend to the whole field of sounds.

271. The case of the language-teacher is again different. Even if he has to deal only with one language—whether it be his own or a foreign language—he cannot successfully teach its pronunciation on the basis of a knowledge of the sounds of that language only. Thus it is evident that in teaching English to foreigners he cannot correct their mispronunciations without a knowledge of the habits of speech which give rise to them. It is also evident that he cannot teach the foreigners to deduce English sounds from those of their own language without being able himself to recognize

and analyse the formation of the latter. Even if he teaches his own countrymen a foreign language, he may still have to reckon with the individual peculiarities, provincialisms, and vulgarisms of his pupils. Thus in imparting a correct pronunciation of German to a class of speakers of Southern English he will have to employ different methods from those which would suffice with a Scotch class.

272. The necessity of a knowledge of general phonetics for the scientific student of language, the comparative philologist, the polyglot linguist, as well as the pathological elocutionist, who has to deal with defects of speech, and to teach deaf-mutes to speak, is self-evident.

Practical and Theoretical Study.

273. The warning in § 85 holds good even in the study of general phonetics: this also must at first be mainly practical.

274. Theoretically, of course, the organic study of phonetics is a branch of anatomy and physiology; while from the opposite point of view it is based on that branch of physical science known as acoustics, together with the anatomy and physiology of the organs of hearing.

275. Unfortunately, this basis is still so imperfect as regards the acoustic side of phonetics that it is not too much to say that from the physical science point of view there is as yet no science of phonetics at all. The principles of acoustics are well established, and much is known about the anatomy of the ear. But how the ear transmits to the brain the impressions of sound is still as great a mystery as ever. And although practical phonetics has made the mechanism of the vowels clear enough, there is still no generally received acoustic theory of their formation.

276. But phonetics considered as a branch of physical science is a subject of only secondary importance. The real function of phonetics is philological and literary: its true

raison d'être is to serve as a basis for the study of languages. And if we regard phonetics as essentially a linguistic science, we shall find that the want of a rigorous scientific basis is not such a serious defect after all.

277. And where the basis exists it is often superfluous. This is especially the case with the anatomy and physiology of the organs of speech. Thus even the most advanced instrumental phonetician finds that, although he ought theoretically to have a thorough knowledge of the anatomy and functions of the muscles of the tongue, he can determine—or fail to determine—its positions quite as well without this knowledge.

Acquisition of New Sounds.

278. The first step in the study of general phonetics is gradually to enlarge our stock of sounds. We have already learnt how to deduce unfamiliar foreign from familiar native sounds. But the only sure way of fixing these new sounds in the memory is a practical study of the languages in which they occur. When differences of meaning hinge on such slight distinctions as those between the vowels in *men* and *man*, or French *é* and *è*, the learner is forced to make and hear them, and his organic and acoustic sense are both trained and developed to the utmost by incessant repetition. Nor need this training be gained only from living languages. The restoration of the original Latin and Chaucerian pronunciation is a valuable preparation for and help in the practical study of modern languages; and mistakes in the pronunciation of a dead language are less serious.

279. In this linguistic phonetic training the student should by no means confine himself to French and German and such other languages as he is obliged to study in detail as part of his equipment for his career in life, but should seize every opportunity of learning something of every language that comes in his way. Even if he has only a month

or two to give to Welsh, Russian, Arabic, as the case may be, it is always worth his while to acquire a general knowledge of its structure, to read through a certain number of texts, giving, of course, special attention to the sounds and their synthesis.

280. Even if he does not engage in systematic study under a native, he can at least cultivate the habit of observation ; in his own country as well as abroad he can always keep his ears open for varieties of pronunciation.

281. As regards the choice of a teacher, the first thing is to make sure that he speaks some one definite, unmixed dialect naturally and correctly—what the dialect is, does not matter much from the point of view of general phonetics. The ideal teacher for a literary language is, of course, one whose natural dialect is the standard one, and who is competent to teach it phonetically by means of phonetic transcriptions. If he is not a trained phonetician, it will often be worth the learner's while to try to interest him in phonetic methods, and perhaps even to train him to write texts in phonetic spelling.

282. If the teacher is unwilling to give, or incapable of giving the natural pronunciation, it is often safest not to let him see the phrase-book or whatever text is used, but read the English translation to him, and ask him how he says that in his own language. If there are no phonetic transcriptions to be had, the learner can begin by marking the pronunciation roughly by adding diacritics to the nomic text, and then gradually form a complete system of transliteration.

283. The phonograph is in most respects an imperfect substitute for a native teacher. Its reproduction of individual sounds is always more or less indistinct, however loud it may be, and it sometimes distorts them. It succeeds best with the more sonorous elements of speech, especially the vowels, and in giving the general effect of

stress and intonation. Here, indeed, the machine has a decided advantage over the living voice: the same piece of French, for instance, can be turned on over and over again, bit by bit, with the certainty of always hearing the same shade of accent reproduced with absolute correctness as well as uniformity.

Objective Methods: Instrumental Phonetics.

284. The natural method of learning sounds is mainly a subjective one. We listen patiently till we are familiar with the acoustic effect of the new sound; and then—often only by repeated trials—we hit on the exact position of the organs of speech by which we can reproduce it to our own satisfaction and that of our teacher.

285. This natural method admits also of objective control by direct observation of the movements of the lips and jaws, and, to some extent, of the tongue, soft palate, and other parts of the mouth and throat-passage, self-observation being carried on by means of a hand-mirror. If a mirror small enough to go into the mouth is fitted to a handle, we have the laryngoscope. More may be seen with the Röntgen rays, whose use, however, is attended by some drawbacks—such as loss of hair, and the necessity of having the back teeth drawn—the results hitherto obtained being too vague to be of much use.

286. There are other methods besides those of direct observation, by which the positions may be determined and measured. The interior of the mouth may be explored by the fingers. A finger may be used as an artificial palate (§ 76). Several forms of apparatus have been devised for a more accurate determination of the positions of the organs of speech, especially in forming the vowels, such as the cardboard disks on wires used by Grandgent (see Bibliography, § 382). These methods are all laborious, and never quite reliable.

287. There are other methods whose results are obtained only indirectly, such as the palatographic, by which 'palatograms' are made, recording the contact of the tongue with an artificial palate. This method is limited in its application, and its results are often doubtful and ambiguous.

288. There are more elaborate methods—with which the name of 'experimental phonetics' is more specially associated—which involve special training in physics and mathematics and in handling complicated apparatus. The investigation of the speech-curves of phonograph and gramophone records are an example. Although these methods have yielded results of some value, the results must always be received with caution, the sources of error being so numerous.

289. Even when a mass of reliable observations has been collected, they are often exceedingly difficult to handle.

Thus in Zünd-Burguet's *Recherches expérimentales sur le timbre des voyelles nasales françaises* we have twelve photographs of lip-positions—which, we are warned, have lost much of their clearness in the process of reproduction—together with a variety of palatograms and other diagrams, with the help of which the investigator claims to be able to classify the vowels in question in the order of the height of the tongue. But as there is nothing to tell us whether the height of the tongue in any one vowel as compared with any other is the result of raising the whole body of the tongue, or only of altering its shape (as in making it narrow), this information is of little use by itself; and a linguistic phonetician who took it on trust might find himself landed in serious errors. Again, if we examine the photographs, we find that they show a different position for each vowel; in fact, the contemplation of these photographs might very well lead an ordinary observer to deny the reality of the distinction between round and un-round vowels. And if we had other photographs of the lip-positions of other French speakers, fresh differences would probably appear. The results of the more elaborate and indirect methods often appear in the form of voluminous tabulations from which none but a skilled arithmetician can draw any certain and definite conclu-

sions—conclusions which, again, may be materially qualified, or even directly contradicted by a fresh set of observations on another, or even the same subject, if he is not inured to speaking into a funnel with his mouth full of apparatus.

290. It must be remembered, however, that instrumental phonetics is still in its infancy. Its methods are being continually improved and simplified, and it is impossible to say as yet what they may result in.

291. At present there is a natural—and indeed, unavoidable—antagonism between the practical linguistic phonetician and the physico-mathematical instrumental phonetician. The qualifications and training required on both sides are so opposed to each other, and each of these branches of research makes such imperious demands on the time and energy of its votaries, that it is difficult to see how any one investigator can combine them.

292. Although the conservative phoneticians of the older school may go too far in ignoring the results of instrumental phonetics, it is possible to go too far the other way also. Some of the younger generation seem to think that the instrumental methods have superseded the natural ones so completely that attending a course of ‘*phonétique expérimentale*’ at some holiday course in France makes the laborious training of the linguistic phonetician superfluous.

293. This assumption has had disastrous effects. It cannot be too often repeated that instrumental phonetics is, strictly speaking, not phonetics at all. It only supplies materials which are useless till they have been tested and accepted from the linguistic phonetician’s point of view. The final arbiter in all phonetic questions is the trained ear of a practical phonetician. Differences which cannot be perceived by the ear—and many of the results of instrumental phonetics are of this character—must be ignored; and what contradicts a trained ear cannot be accepted.

294. And it must not be forgotten that the utility of

instrumental phonetics as a means of research does not necessarily imply a corresponding utility as a help in acquiring a practical mastery of sounds—which, as we have seen, is the only sound foundation of the science. As yet, instrumental phonetics, so far from being a help in the practical study of sounds, has been rather a hindrance, by diverting the learner's attention from that patient cultivation of the organic and acoustic sense which is the indispensable basis.

Study of the Literature.

295. The same may be said, to some extent, of the study of the literature of phonetics. Phonetics can no more be acquired by reading alone than music can. It must also be remembered that phonetics is a comparatively new science, whose results are still unsettled, whose authorities differ widely in their views.

296. But this, of course, makes it all the more necessary that the serious student shall make himself acquainted with the literature at first hand, so as to be able to form an independent judgement of his own.

297. But he must at the same time avoid confusing and stupefying his mind by attempting to assimilate an indigestible mass of conflicting views and statements before he is able to sift it critically. Whatever school or method he begins with, he should thoroughly master that before proceeding to another. The student who has worked through this little book will find the necessary information to guide his further reading in the bibliography at the end of it.

298. The student cannot confine himself to any one authority or even to any one school; if for no other reason, because each has its own special merits and the defects of its qualities. However wide a phonetician's range of knowledge may be, he must know some sounds and some sound-systems better than others: he must know the sounds of his own language best; a Romance philologist ought

to be a better authority for the sounds of French and Italian or Spanish than a Germanist, and so on ; and the general scheme and classification of sounds may be affected both favourably and unfavourably by the national speech and linguistic habits of its author.

299. Hence some have gone so far as to deny the possibility of general phonetics. According to them, each speech-nationality must have its own special systematization: the English vowel-system is all very well for the English-speakers, but is no good for Frenchmen and Germans.

300. But without going to such an extreme as this, we cannot ignore the fact that phonetics may be approached from two opposite points of view. The generalizing tendency is shown in its extreme form in the English vowel-square, which provides—or attempts to provide—an *a priori* pigeon-hole for each vowel-sound. The opposite tendency is to subordinate classification and general construction to detail, so that the vowel-system tends to resolve itself into an endless line or series of isolated details.

301. The truth is that we cannot dispense with either of these. Bell's Visible Speech vowel-square was a great advance on the older triangular arrangement, and so far it has been a help to the detailed study of isolated sounds. But where it gave false or misleading key-words, set up an artificial elocutionary pronunciation of English, misrepresented the formation of sounds to make them fit into the system, or failed to provide pigeon-holes for sounds which the author had not yet come across, it was a hindrance and a stumbling-block. In the revised and supplemented form given in this book—which is, to a great extent, the result of detailed independent investigations carried out without regard to preconceived theories—it has again become an instrument of progress.

302. The great defect of the detail-method is that it supplies no corrective to the limitations, one-sidedness, and

caprice of the investigator. A keen observer who had not been trained to distinguish narrow and wide vowels would nevertheless hardly fail to make the distinction in some vowels, but he might easily ignore it in others. Thus Ellis distinguished [i] and [i̥] long before the appearance of Visible Speech, but ignored the distinction in the case of y, where it is disguised by the rounding.

303. The young student must bear in mind that what is new is not always the best, or even the most advanced: there is retrogression as well as advance in the history of phonetics as in other branches of knowledge.

304. As a subject becomes more and more complicated, the want of a popular as well as a severely scientific treatment of it becomes more and more felt. There is, of course, no more harm in popular phonetics than there is in popular astronomy—the demand for both is a natural, healthy, and legitimate one—but it is necessary that the two should be kept strictly apart: that the dilettante phonetician should not pose as a scientific investigator merely on the strength of a notation in which half the letters of the alphabet are turned upside down.

Phonetic Notation.

305. One of the greatest difficulties in the study of general phonetics is the diversity of notations employed not only by different writers, but often also by one and the same. This diversity is not solely the result of caprice and the striving after cheap originality, but is to some extent the inevitable result of certain fundamental divergencies in the objects and uses of sound-notations, of which there are three kinds:—

(1) Arbitrary alphabetic, in which there is no consistent association between sound and symbol: the Roman alphabet is a familiar example.

(2) Symbolic alphabetic, in which there are definite relations between sound and symbol, which relations may be either organic or acoustic, or a mixture of both of these, it being now generally admitted that a scientific symbolic alphabet must be organic, while a popular one must be partly acoustic: the best example of a scientific symbolic alphabet is Visible Speech, of which the Organic Alphabet is the revised and supplemented form.

(3) Analphabetic, in which each sound is represented by a group of symbols resembling a chemical formula, these symbols being generally either numbers or Roman letters, or a combination of both with, perhaps, other characters as well. Jespersen's Analphabetic Notation is the best known and most fully worked out of these.

306. It is evident that the notations which fall under (3) are of such limited application that they may be ignored from the point of view of practical phonetics, useful as they undoubtedly are from a theoretical point of view, even if we regard them only as temporary substitutes for an ideal scientific alphabetic system.

307. When we say 'alphabetic', we mean only alphabetic basis. The maxim 'one single symbol for each sound' is all very well in theory, but impossible to carry out in practice. The number of possible distinctions is so great that no notation can do more than provide symbols for groups of sounds, each of which sounds must be further differentiated when necessary by modifiers such as 'inner' and 'outer', and marks of rounding, &c. No system of writing can dispense with digraphs and even trigraphs; in fact, the more scientifically minute a notation is, the more it approximates to the analphabetic principle.

308. Whatever alphabet is adopted—whether an arbitrary or a symbolic one—it must be capable of modification so as to supply the want of (1) an international scientific 'narrow' notation, in which all possible shades of sound can be

expressed with minute accuracy by symbols of fixed values, and (2) an indefinite number of national 'wide' notations, each of which selects the minimum number of simplest letters required to express the practically necessary sound-distinctions of the language in question, ignoring those that are superfluous, so that all the national systems appear as modifications of a common basis, each diverging from it only as far as is made necessary by considerations of simplicity and ease of printing and writing both in long and short hand.

309. As regards the distinction between the last three, it is to be observed that in printing the complexity of the letters does not necessarily affect speed or ease; so that the number of possible forms is infinitely greater than in writing, which has a comparatively very limited number of simple, joinable forms to choose from. Hence the printed forms are generally more distinct than the written ones, as we see by comparing, for instance, the capital and lower-case Roman A, a with the italic *a*. As it is desirable to have as few types as possible, most phonetic systems founded on the Roman alphabet discard altogether the use of capitals as such, using small capitals, if at all, only to supplement the lower-case alphabet, the capitals acting thus as new letters. As the capitals have not convenient script forms, this use of them is confined to scientific notations.

310. Some transcriptions consist entirely of italics, the idea being to make the printed and the written characters the same as far as possible, and also to make the phonetic symbols stand out distinctly on a page of Roman type. But as italics are required for a variety of other purposes as well, it is better to make the more legible lower-case letters the basis, and use italics for supplementary purposes—of course, only in scientific notations.

311. The Roman alphabet is in itself unscientific and

imperfect, but it has the great advantage of being the result of a long series of experiments, besides being in universal use. Its foundation ought to be left untouched, for any attempts at radical reform would simply result in the substitution of a totally different alphabet—which will no doubt come to pass sooner or later.

312. In adapting the Roman alphabet to phonetic purposes the first thing is to utilize all the available existing symbols: to give phonetic values to *c*, *q*, *x*, settle what is to be done with the italic and capital letters, and so on. The next step is to supplement it. There are many supplementary devices—such as the use of italics and capitals—which, as we have seen, are admissible only in a scientific notation where speed and ease are not indispensable qualifications of a working alphabet. In a practical broad system, on the other hand, the first thing to be considered in a new letter is whether it can be written and joined easily. The best new letters are those which are the result of utilizing duplicate script forms, as in the use of the otherwise superfluous long forms of *s* and *z*—*ſ*, *z*. Such new letters as *œ*, *ø*, *ŋ* are also unexceptionable in every way. But to make italic *a*, *g*, *v* into Roman letters distinct from *a*, *g*, *v*, by printing them upright instead of sloping, as is done in the alphabet of the Association Phonétique, is an illegitimate extension of the principle. The inevitable result is that new script forms have to be invented to take the place of the old *a*, *g*, *v*, which latter are perfect for the purpose. The natural further result is that most of these new script forms are not used at all, their place being taken by laborious detached facsimiles of the printed forms.

313. The most objectionable class of letters in a broad alphabet are diacritical ones. In their printed forms they are practically new letters; and in writing they involve not only a break, but a further waste of time and effort in the movements of the pen from the line of writing to the

diacritic and back again, as we see in the letter *i*. Of course, when diacritic letters already exist, they may be utilized, especially in a scientific notation.

314. But every modification of such a basis as the Roman alphabet must necessarily be an unsatisfactory makeshift—repulsive to every one but the inventor, who is generally not an inventor at all, but simply a reviver of devices which have been tried and rejected over and over again. To the general public all systems of writing which clash with the associations of the traditional printed and written nomic orthography are ugly and ridiculous—whatever their intrinsic merits may be.

315. But in spite of all diversity there is also much agreement: there is already a rudimentary public opinion, sometimes in the principles, but oftener in the details of phonetic notation. It is therefore better to leave disputed and doubtful points to be settled by experience, to trust to the survival of the fittest, rather than make the vain attempt to enforce one uniform system of notation while the very foundations of phonetics are still under discussion.

316. The adoption of a uniform phonetic notation for exclusively scientific purposes will, of course, be highly desirable when our knowledge of sounds is fairly complete, and there is agreement among experts on the principles of phonetics. But such rigid uniformity is not desirable, or indeed possible with a practical alphabet, which, as we have seen, must necessarily differ in its details with each language to which it is applied.

317. It must be observed that the distinction between 'narrow' and 'broad' is not an absolutely definite one. There are degrees of broadness. The extreme of simplicity with which an easily accessible modern European language can and should be written would be out of place in the representation of the necessarily more or less conjectural restoration of the pronunciation of Chaucer or Shakespeare:

here we naturally expect a more minute notation—a compromise between narrow and broad.

318. Such a compromise must not be confounded with a dilettante notation. The former adopts the minuter distinctions of the scientific alphabet only when they are practically useful from its special point of view; the latter is a compromise in a more literal sense: it is not accurate enough to be really scientific, and yet too complicated and cumbrous for ordinary practical use. Not that it is to be condemned on these grounds; on the contrary, a dilettante phonetic notation has the same justification as the dilettante conception of phonetics of which it is the expression. It is better that people should frankly acknowledge that the distinction of narrow and wide vowels or the discrimination of five degrees of stress is too much for them and ignore them accordingly in their transcription than attempt to use a notation involving distinctions which they are unable to make.

319. The great disadvantage of the use of the Roman alphabet in phonetic notation is the inevitable confusion between the associations of phonetic and nomic spelling, not to speak of the endless confusions which arise in passing from one phonetic notation to another.

For this reason some will perhaps find it desirable to avoid the cross-associations between the broad and narrow Romic notations by discarding the latter in favour of the Organic alphabet—especially in dealing with the vowels. The confusion is much less with the consonants. On the other hand, it is necessary to have a narrow Romic notation for convenience of use by those who have not access to the Organic symbols; and also because to many a totally new notation like Visible Speech or the Organic Alphabet is—or seems to be—a more formidable obstacle than the cross-associations of a Romic system.

THE TEACHING OF PHONETICS

320. The general principles of the teaching of phonetics have been either implicitly stated or implied in the earlier sections of this book ; it remains now to discuss details, and consider the various applications of general principles to special needs and requirements.

Phonetics in language-teaching.

321. The teaching of phonetics in the most rudimentary form of that teaching implies at the very least the attempt to impart information on the classification of sounds in general, together with an explanation of the requisite terminology, and of the sound-notation of at least one language—in most cases the native language of the pupil or class.

322. But the pronunciation of a given language can be taught fairly well without even this minimum of phonetics—especially if the pupils have not been already spoilt by bad teaching. Thus with a class of young children beginning French or German, good results may be obtained by simply letting them imitate the carefully isolated sounds of the teacher. The teacher may repeat such a word as the French *ennui* a hundred times without eliciting anything better than *onwuj* ; but if he lets the pupils hear *en*, *nu*, and *i* separately, each pronounced many times in succession, slowly and distinctly, and then lets them imitate, a comparatively satisfactory result will be obtained without much difficulty. When the pronunciation of the first few words in the text has been mastered, these words should be joined together and practised till the whole group runs smoothly

and without hesitation ; then the last word should be run on to a succeeding group, and the last—or last but two or three—of this group to the next, and so on ; this overlapping process ensures the continuity of the whole sentence.

323. If the pupils come quite fresh to the language, confusion with the nomic spelling may be avoided by not letting them see the printed page till they have learnt the pronunciation by ear. Or the lesson may begin with writing the numerals 1, 2, 3 . . . on the blackboard, and associating each with its name in the foreign language. Or pictures may be used.

324. But a far quicker and more efficient method is to begin with a phonetic transcription, and keep to it for at least a year, the nomic spelling being kept entirely in the background till the pronunciation has been thoroughly acquired. However often the learner may have the phonetic elements of a word repeated to him, it is always a help to have the impressions of the ear confirmed by the written symbol, and still more to have it thereby corrected or supplemented.

325. Although the difficulty of passing without confusion from the phonetic to the nomic spelling is much less than is generally assumed, its existence cannot be denied. Hence it is perhaps better not to have a special transcription for such a language as German : all that is wanted here is to supplement the nomic spelling with stress-marks and diacritics or other marks to show vowel-length before consonant-groups, and so on.

326. The difficulties attending phonetic transcription would be much lessened if there were a uniform international Broad Romic transcription for each language instead of a variety of special ones for learners of different nationalities. Modifying the transcription of a language does not make its sounds any easier to pronounce. And some confusion with the learner's nomic orthography is

inevitable with every transcription in Roman letters; but with a little practice they soon disappear.

327. Even the use of a phonetic transcription does not necessarily imply any express teaching of phonetics. It merely means that the learner substitutes definite and regular associations between sound and symbol for the vague and conflicting associations involved in the use of the nomic spelling. He learns the values of the phonetic symbols empirically and by imitation, just as he learnt to read the nomic spelling of his own language.

328. The methods hitherto discussed consist in utilizing phonetic principles without introducing phonetics itself. A further development consists in the teacher bringing in phonetic analysis whenever imitation fails, or is made easier by so doing—or, in short, whenever it is worth while. This implies, of course, that the teacher, although he does not teach phonetics systematically, must have a competent practical knowledge of it.

Phonetics is from this point of view only an occasional commentary on the learner's simultaneous acquisition of a foreign language.

329. But there is still another and a better method: begin, not with a foreign language, but with the systematic teaching of elementary phonetics and elocution in connexion with the study of the native language. In this way the learner approaches the study of foreign languages with a thorough practical linguistic training which will greatly facilitate his task.

Qualifications of the Teacher.

330. There are many branches of linguistic study in which a general theoretical knowledge of phonetics is sufficient—or, at least, in which good work may be done without much practical command of sounds. But something more than

this is required of the elementary teacher of the native as well as a foreign language. He has no more right to set up as a language-teacher without having a certain aptitude for phonetics than he would have to undertake to teach drawing without having an eye for form. Rational elementary language-teaching without phonetics is impossible. The three main qualifications of such a teacher from the phonetic point of view are :—

(1) He must have a thorough practical knowledge of the language which he teaches as well as of his own language ; he must be bi-lingual, one of the two languages being his own ; no foreigner should be allowed to teach another foreign language in England any more than in any other country.

(2) He must have if not a quick, at least an accurate ear for sounds.

(3) His organs of speech must be free from congenital defects, and he must have them under such control as will enable him to reproduce accurately all sounds with which he has to deal.

There is a fourth qualification of a teacher of phonetics—a qualification of a phonetic nature—which he must possess in common with all teachers : such an elocutionary training as will enable him to make himself heard distinctly without strain—without having to ‘shout at his class’.

331. The systematic training of teachers of phonetics implies the establishment of professorships and lectureships of phonetics at our universities, training-colleges, and similar institutions. The professorships would, of course, have attached to them special libraries and seminaries for practical work and research. Every professor must be first and foremost a linguistic phonetician (§ 291). If he is also a good elocutionist, so much the better. Experience alone will show whether the teaching of elocution should as a rule be detached from that of phonetics : that is, detached

as far as it is possible ; for elocution except on a phonetic basis is mere charlatanry.

332. As regards instrumental phonetics, we can have no hesitation in saying that although every higher teacher of phonetics ought not to ignore its results, it would be unreasonable to expect him to handle the instruments himself and to have a specialist's knowledge of the subject. We should all welcome the phoenix who was at once a perfect linguistic and instrumental phonetician as well as an elocutionist, besides being an authority on the methods of language-teaching, but to exact such a combination would only be an encouragement to superficiality and imposture.

333. Linguistic phonetics is, indeed, more naturally associated with the practical study of languages—the investigation of the general principles on which languages ought to be taught and learnt. It stands to this study much in the same relation as it does to elocution : both are based on phonetics, although they both extend considerably beyond it in their higher developments.

334. When it is found desirable to establish special teacherships of instrumental phonetics, they would naturally be attached to the physical science laboratories.

It is further evident that a detailed study of instrumental phonetics would be a speciality of advanced students, not of elementary teachers.

335. At present we have to manage as best we can with more or less incompetent teachers. The greatest mistake that can be made with these is to try to force them to use methods which are beyond their capacity. A short course of dilettante linguistic or instrumental phonetics abroad does not qualify to teach the English vowel-system. Under these circumstances it is better for such teachers to leave it alone.

Qualifications of the Learner.

336. The percentage of pupils who have really quick ears—who are able to reproduce sounds accurately after hearing them only a few times—is a very small one. Such pupils are often conceited, and often averse to methodical study and impatient of training.

337. Those, on the other hand, who have exceptionally obtuse ears, so that they cannot even hear the finer shades of difference in unfamiliar sounds even after repeated hearing under the most favourable conditions, ought to be dissuaded from the study of phonetics if after a short trial they show no signs of improvement.

338. It must, however, be borne in mind that what is popularly called 'a bad ear for sounds' may proceed from a variety of causes—not necessarily of an acoustic nature—some of which may be curable. It may be the result of temporary deafness; and this may be cured by ceasing to act on the maxim that 'only fools fear draughts'. Or the inability to reproduce new sounds may be solely the result of want of training of the organs of speech.

339. Such students, if they persevere, generally drift into instrumental and theoretical phonetics, in which they may do valuable work; although, of course, they are unfit to act as practical teachers.

One of the drawbacks of a bad ear is that it leads the pupil not only to mishear, but also to hear differences where none exist. Even those who have good ears often fluctuate in their appreciation of sounds which are still unfamiliar and difficult to them. They hear the sound vary from word to word, and pride themselves on what they imagine to be their superior powers of discrimination; but when the sound has become really familiar, this apparent fluctuation ceases.

340. On the whole, those who have a moderately good ear are the best: those who take some time to acquire a

thorough and easy command of a new sound, but who always get it in the end, and do not forget it again in a few days, which is often the weak side of the abnormally quick ear.

341. The question is often debated, whether a musical ear is a help in phonetics, apart from its self-evident use in the study of intonation and the pitch of resonance-cavities. There can be little doubt that those who have a good musical ear—especially, perhaps, those rare ones who have an ear for absolute pitch—are generally good at discriminating speech-sounds. A musical training—especially in singing—also develops the appreciation of good tone in voice-production. A knowledge of music is, in short, a great help to the phonetician as well as the elocutionist—and in many ways besides those already indicated. Those who take it up with this in view will do well to confine themselves definitely to singing and the piano, which supplement each other perfectly, care being taken always to subordinate the latter to the former.

Ear-training: Phonetic Dictation.

342. The best training in the recognition of sounds by ear—apart from the still better but less systematic training afforded by language-study—is phonetic dictation. Phonetic dictation should, of course, always begin with the sounds of the native language, first in series of isolated strong-stressed words, such as the numerals or the days of the week, and then in short colloquial sentences. The phonetic symbols with which the pupils write down what is dictated to them must at first be the simplest possible Broad Romic notation of the language that is used.

343. The normal method of correcting the dictations and returning them to their writers at the beginning of the next lesson with the necessary corrections and comments should,

especially in dealing with slow or diffident pupils, be preceded by a course of what may be called 'unseen dictation'—that is, unseen by the teacher. He dictates a word or group of words, slowly and distinctly several times over, pauses a little, and then himself writes the correct phonetic transcription on the blackboard, waits till the pupils have verified or corrected what they have written, and then dictates a further instalment of his text.

344. Phonetic dictation is stimulating to the pupils, and affords the teacher a ready and sure method of testing not only their ear, but also their general intelligence, as well as their knowledge of phonetics, and their power of handling symbols and notation, which is almost as important for the phonetician as for the mathematician.

345. The hopeless blundering of otherwise intelligent and educated pupils in their first attempts at phonetic dictation is a continual source of unwelcome surprise not only to themselves but sometimes even to their teacher—accustomed as he is to the total want of the power of observation which is the result of the current method of learning languages by eye instead of by ear. But it must, in justice to the pupils, be observed that many of their earlier mistakes are the result of the inevitable intruding associations of the nomic forms.

346. With those who have prepared themselves by an extensive reading of texts in Broad Romic, phonetic dictation becomes mainly a matter of memory and visual association, till at last it becomes almost as mechanical a process as writing from dictation in nomic spelling—although by that time the pupil will certainly have acquired a very respectable knowledge of the phonetics of the language.

347. A more advanced stage may then be entered on: that of adding stress- and intonation-marks, the former being most conveniently written above the symbols of the sounds on which the stress begins instead of before them,

for which there is often not room. The point may be written as a vertical stroke.

348. The most effectual check on the mechanical reproduction of visualized phonetic spellings is 'nonsense dictation'. The nonsense-words required are easily obtained by writing ordinary words backwards, with such further alterations as may be required to smooth over impossible or otherwise objectionable sound-combinations and sound-positions. The following is an easy nonsense poem made up of English sounds, together with *x* :—

e maas vø fail.

let iim tonni luf nòm zəbmən,
failzi təbnə itmi miəd;
ɔfəð lous zided təð zəbməls,
dæn zɹɪp tonaa tof eið miis.

fail zilie, failzi tsinə,
dænəð veieg ziton stiloug;
tsɹɔdaʊð taa ət tsɹɔd tsinəetie,
zovton nəkəups uutəð lous.

təlsə nəʃib pənə iɹuud,
ðiv ɛtaax rɛf ini teif;
lits ɹiviɪftə, lits ɹijuusep,
nəelet rɛbeil dænət teiv.

349. When the phonetic transcription of the native language has been thoroughly mastered, phonetic dictation may be given in French and German, beginning with the latter, if already familiar to the pupils, as being much the easier. Here the patience of the teacher will be sorely tried by the mechanical way in which many of them will transfer transcriptions of English sounds to foreign sounds which they do not fit. Thus, if he has taught them to

reproduce faithfully his own diphthongic pronunciation of *ii* and *uu*, he must be prepared to find them transcribing *sie sind gut* with *sij zint guwt*, even after he has indirectly warned them against it.

350. Phonetic dictation in a foreign language unknown to the pupils is risky, even if the teacher's command of it is as perfect as he assumes it to be, and it is one with a comparatively simple sound-system, such as Finnish or one of the Polynesian languages.

351. The difficulty of writing phonetically from dictation in a language whose sound-system is not already familiar to the writer depends, however, mainly on the degree of 'narrowness' of the notation employed. The difficulty may be reduced to a minimum by allowing the pupils to extemporize a compromise between Narrow and Broad Romic, or to employ such a transliteration as that of the Association Phonétique. To write from such dictation with a minutely accurate scientific notation would be beyond the powers of any but an exceptionally gifted and long-trained student. The only reasonable ear-test of advanced pupils is the recognition and correct naming of isolated sounds or short and simple combinations of sounds pronounced to them several times over by the teacher or examiner.

Helps.

352. Of all external helps in teaching phonetics, diagrams of the organs of speech and their positions are the most important. It is desirable that the teacher should be able to supplement the ready-made ones with those which he draws himself on the blackboard. Some learn less easily from diagrams than others. To such pupils models appeal more than diagrams; but they are of little use in teaching the actual positions.

As regards apparatus, the phonograph is often useful

in dealing with points of synthesis, especially intonation (§ 288) and organic basis.

353. When instrumental phonetics is introduced into elementary teaching it generally degenerates into what may be called 'toy phonetics', which, however, has its uses: the bell of the *indicateur* often serves to stimulate the flagging energies of a dull or inattentive class.

But, after all, the use of such external stimuli means only so much time and energy taken from the real business of the class; which is, to learn to isolate, analyse organically, and distinguish by ear as many sounds as possible. In most cases the gain is not enough to compensate the loss.

Necessity of individual attention.

354. Practical phonetics, like music, cannot be taught successfully without special attention to the needs of each pupil. Lectures to classes of a hundred or more serve, from this point of view, mainly to stimulate interest and to indicate lines of study, and, to some extent, lay a foundation by describing sounds with which the hearers are already familiar. Even a class of not more than thirty is too large for thorough practical work, unless it is composed of naturally gifted and earnest students speaking the same language. The best results are obtained with a class of not more than twelve. Some learn better in such a class than by private tuition, partly because it is more stimulating, partly because hearing the sounds uttered by a variety of voices gives a wider and firmer grasp of them, and makes them more easy of recognition. From this point of view a mixed-language class—one composed partly of natives, partly of speakers of various foreign languages or dialects—is preferable to a one-language (one-dialect) class; although, on the other hand, more rapid progress will be made in the latter.

Time.

355. The time required for a complete elementary training in phonetics suitable for language-teachers and elocutionists, and others to whom it is only a preparatory subject, is a year at the very least.

356. The first term would be devoted mainly to the isolation, analysis, and notation first of the native sounds of the pupils, and then of those unfamiliar sounds which they would be able easily to deduce from their native ones. The explanation of general principles and the classification of sounds would be strictly subordinated to this preliminary training.

In the second term the whole body of sounds would be studied more or less in individual detail according to their relative importance from the pupils' special point of view.

In the third term the study of synthesis would be completed; much of it would necessarily have been given in the two preceding terms. Then the phonetic structure of different languages would be studied in detail. Continual revision of the sounds would go on during the whole course, for sounds cannot be practically acquired without incessant repetition.

357. A three years' course would be the minimum for those who take phonetics as a preparation for the science of language generally, or its applications to historical and comparative philology and other special branches of linguistic investigation, practical as well as theoretical; as also for those who make a speciality of the teaching of phonetics itself, elementary as well as advanced.

The first year would cover the same ground as the course already described.

In the second year everything would be revised more in detail wherever necessary or advisable. At the same time the history and literature of phonetics would be critically studied, together with the principles of historical and com-

parative phonology ; and the phonetic structure of a variety of languages would be investigated by the more advanced students in the seminary.

In the third year the students would begin to specialize, some devoting themselves mainly to the applications of phonetics to dialectology, language-teaching, &c., others to elocution and the applications of phonetics to literature, others again to instrumental phonetics, others to phonology and the other applications of phonetics to the historical study of language. Others again would concentrate themselves on special lines of research dealing with the pronunciation and phonology of some one language or dialect or group of languages or dialects.

358. It must always be borne in mind that phonetics can only be acquired gradually, by a slow process of graduated systematic training. Phonetics cannot be crammed up from textbooks : learning definitions by heart is not learning phonetics.

359. In fact, when we consider that the old Italian singers often spent six or more years in qualifying themselves to appear in public, we can hardly—making every allowance for the time saved by improved methods and apparatus—assign less to an ideal scheme of voice-training in the widest sense of the word : one which aims at giving the student a complete and absolute control of all the resources of his voice not only phonetically, but also as regards voice-production and elocution.

Examining in Phonetics.

360. Examinations are generally admitted to be evils—necessary, perhaps, but still evils. And all the objections to them apply with tenfold force in the case of a subject like phonetics, in which written examinations can never take the place of oral, in which glib theory cannot be accepted as an equivalent for practical thoroughness and viva voce

readiness. The general unsettledness of phonetics, the wide divergencies in terminology and notation as well as in classification and theory are further obstacles. The dearth of competent and impartial examiners is another. The low standard of efficiency in teachers as well as pupils brings further embarrassment and doubt to the conscientious examiner.

361. This raises the question whether in the face of all these difficulties the best advice with regard to examining in phonetics would not be—don't! As regards modern languages and elocution it certainly seems safest—at present, at least—simply to go by results: in modern languages, not to examine in phonetics, even if it is made an integral and definite part of the teaching, but to insist all the more rigorously on a certain standard of correctness and ease in the colloquial pronunciation of the language. There are other considerations which point in the same direction. It cannot be denied that some methods of phonetic instruction—especially those carried on by means of apparatus—so far from improving a pronunciation acquired by imitation and direct phonetic methods, often cause positive deterioration. In short, the best teacher is not the most fanatical adherent of this or that method or notation, but the one who elicits the best pronunciation from his pupils.

362. Although viva voce must always predominate in all phonetic examinations that lay claim to any thoroughness, this does not mean that paper work is to be entirely excluded. It is evident, for one thing, that phonetic dictation ought to form part of every examination in phonetics—even the most elementary. But there may be conditions which exclude the living voice. Under these circumstances the place of phonetic dictation must be taken by the setting of a passage to be transcribed from nomic into phonetic spelling.

363. In setting papers—whether oral or written—for an

examination in phonetics, the first thing is to be sure that the questions are intelligible: especially that the terminology and notation used by the examiner are familiar to the candidates. Examinations in phonetics must not be tyrannically used as a means of cramming one particular school of phonetics or one special notation down unwilling throats. This does not apply to a teacher examining his own pupils, or other conditions of a similar kind. But even in these cases it is better to leave everything open as far as possible: 'Transliterate the following passage into any consistent phonetic notation,' &c.

364. The opposite extreme of setting leading questions must as carefully be avoided. The self-interpreting terminology of the English school lends itself to this with peculiar and dangerous facility, as in 'define and give examples of stopped consonants—front vowels'. There would be no objection to such questions if the answers always embodied a complete list of the sounds required. But what is the lenient, soft-hearted examiner to do with such evasions as these: 'A stopped consonant is a consonant formed with stoppage—with closure of the mouth—with partial stoppage—with imperfect closure followed by an explosion—with closure of the glottis,' the only examples given, perhaps, being *c* and *m*, without any hint whether the former is to be taken phonetically or nomically? Or it may happen that the candidate gives a certain number of approximately correct examples, and then adds one more to show that he has not realized the meaning of his definition, and that all that precedes is pure mechanical cram.

365. All this may be avoided by putting the questions in an indirect form, thus:—

(1) How many consonants are there—are pronounced—are sounded in the following words: *sing, quit, wretch* . . . ?

(2) Classify the above consonants, and describe their formation.

Candidates who do quite respectably in a paper of leading questions and vague generalities often break down utterly with questions of this kind, even when they are so elementary that the young examiner is half ashamed to set them; it may perhaps turn out that while the majority of the class are familiar with the distinction of narrow and wide vowels, know what the glottis is, and can define organic basis, they are still so completely the slaves of the written symbol that they regard the *i* in *time* as a non-diphthongal long vowel, and give *ae* in *Caesar* as an example of an English diphthong in the phonetic sense.

BIBLIOGRAPHY

366. The following bibliography is intended as a guide to further study, not as an exhaustive list for reference: it aims only at bringing before the student those books which will be directly useful to him at the outset. Full bibliographies will be found in many of the works mentioned below.

367. When the beginner has thoroughly assimilated the contents of this little book, he should go on to my *Primer of Phonetics* (Oxford, 1906³), which differs from the present work in dealing with the subject from a more general point of view and with a greater range of sounds and also more concisely and schematically, the phonetic information being given mainly in the form of an explanation of the classification and notation embodied in the Organic (Revised Visible Speech) alphabet, which is employed throughout, with occasional Narrow Romic transcriptions, the Broad Romic notations being employed only in the texts at the end of the book.

368. At the same time—or perhaps before—he should thoroughly familiarize himself with the phonetic structure and phonetic notation of English by reading the texts in my *Primer of Spoken English* (Oxford, 1895²), paying special attention to the laws of gradation and sentence-stress. In my *Elementarbuch des gesprochenen Englisch* (Oxford, 1891²) he will find the same grammatical introduction, but different texts, more elementary and colloquial on the whole than those in the other book, and better suited for foreigners; in the *Elementarbuch* division into ‘stress-groups’ takes the place of the traditional word-division, which is retained in the *Primer*; stress-division, though less convenient and

practical in itself than word-division, has advantages of its own: it is instructive, and often useful in curing foreigners and illiterate readers of the habit of pausing at the end of words or in the middle of a group of closely connected words.

369. The contrasting phonetic system of O. Jespersen should then be studied, his books being taken in the following order: *Lehrbuch der Phonetik* (Leipzig, 1904); *Phonetische Grundfragen* (Leipzig, 1904); *Fonetik* (Copenhagen, 1897). The second deals with the following subjects: Laut und Schrift, Lautschrift, Die beste Aussprache, Akustisch oder genetisch?, Systematisierung der Sprachlaute, Untersuchungsmethoden, Zur Lautgesetzfrage. The third is the original Danish work, of which the two first are condensed extracts, in which much is omitted that is of special interest only to Scandinavian readers. The most characteristic feature of Jespersen's books is their impartial criticism of current views and methods. There is a certain aloofness in his attitude towards his predecessors and contemporaries, the weak side of which appears in his often unnecessary and highly confusing deviations from traditional terminology and arrangement, as if he were determined to be original at all costs. Thus he reverses the English arrangement

throat—back—front—point—lip

in which the stream of breath with which sounds are formed is assumed to move in the same direction as that in which we write, that is, from left to right, so that in all diagrams and tables the back of the mouth is put on the left side, it being further assumed that this arrangement is only to be reversed when there is special reason for doing so—as may sometimes be the case, for instance, in drawing a section of the mouth on the blackboard. It is highly desirable to adopt one uniform standard order, for experience shows that those who have accustomed themselves

to the one find it difficult to think in the other. Jespersen carries his reversal to such an extent that he does not get to the fundamental distinction of breath and voice till long after he has given a tediously and superfluously minute analysis and an elaborate notation of the positions of the lips. There are other innovations in his books which are of a less superficial and petty character, some of which cannot fail to stimulate thought and criticism of hitherto accepted views even if they are not generally accepted. One great drawback to the use of his works is the alphabetic notation (§ 805) employed in them: it is ingenious, but cumbrous and unpractical, and impossible to remember by those who have accustomed themselves to a different arrangement. Jespersen's works, like those of most Continental writers, deal more fully with the consonants than the vowels: his treatment of the latter is the least satisfactory part of his system.

370. E. Sievers in his *Grundsüge der Lautphysiologie* (Leipzig, 1901⁵) approaches the subject from the special point of view of the comparative Aryan philologist; and, accordingly, devotes a special section to a discussion of the laws of sound-change. The treatment of phonetics itself is less concrete and definite than in the works already considered, especially as regards the classification of sounds; the author is one of those who regard with distrust any attempt to construct a general scheme for all languages. In this way Sievers' book will serve as a corrective to the schematic tendencies of the English school and of Jespersen. The abstract point of view from which Sievers regards phonetics often makes his arguments difficult to follow. A characteristic feature of this book is the fullness with which the phenomena of synthesis are treated, especially as regards force and stress, intonation being less adequately treated. The whole book is full of acute observations of details of pronunciation in various languages.

371. Sievers' antagonism to general systematization naturally leads him to eclecticism, especially when he comes to discuss the classification of the vowels. This tendency is still more marked in the works of W. Viëtor, especially in his *Elemente der Phonetik des Deutschen, Englischen und Französischen* (Leipzig, 1904¹). Viëtor's point of view is mainly that of the modern language teacher of the extreme type. He is an uncompromising antagonist of the English vowel-system, which he condemns as a whole without having any practical knowledge of it on such insufficient grounds as Bell's carelessness in the choice of key-words, and my modification of my earlier views through wider knowledge and more mature thought; another of his arguments is that it is impossible to unround vowels. A peculiar feature of his treatment of his own language is the extreme artificiality of his standard of pronunciation. But his book has some practical advantages over those already mentioned: it gives good diagrams of the organs of speech, a comparative table of the different systems of phonetic transcription, and full accounts of the different phonetic systems. One result of his point of view is that he gives long lists of words to show the correspondence between sound and nomic symbol in the orthographies of English, French, and German.

372. One of the most distinguished of the older generation of practical phoneticians is the Norwegian, J. Storm, whose knowledge of the phonetic structure of the chief European languages is probably unrivalled. Unfortunately he has not published any complete system of his own; but the advanced student will find his *Englische Philologie* (Leipzig, 1892-6²) a mine of wealth in the sections dealing either directly or indirectly with phonetics. Storm's specialities are the accurate comparison of sounds in different languages, and the fineness of his ear for distinctions of synthesis, especially intonation.

373. The most convenient introduction to the phonetic

NOTES ON THE TEXTS

255. 3. *sekənd* or *sekŋd*. 9. *wenzdɪ* is the older pronunciation.

256. 2. *Intend*=*ɪnˈtend*. 3. *ǣt*=*ˈǣt*. 21. *put of tuw loŋ* with equal strong stress on all four words in slow speech; in quick speech more stress is put on the second word. It must, of course, be understood that there are infinite gradations between the two extremes *put of* and *:put of*, depending partly on speed, partly on shades of meaning and emphasis.

257. 2. *mōust* might also be written *-moust*, which would imply weak stress—but not quite so weak as in *mōust*—with preservation of the back formation of the *o*. Here, again, various gradations of stress and tongue-shifting are possible. 3. *indɪ;pendəns* has medium stress on the first syllable; it is the emphatic form of *indɪˈpendəns*. 5. *spoukn*: the *n* is *n+ŋ*, with simultaneous back and point stoppage; a ‘careful speaker’ would, of course, make it into *spoukən*, with pure point *n*. 8. *ɪm-self* with weak stress on the second syllable; compare *ɪmself*=*ɪmˈself* l. 16. below. 13. *anfōunetɪk*=*ˈanfōuːnetɪk*: the medium stress is the result of the word being used attributively; the normal form is *ˈanfōuːnetɪk*. 23. *strenʝn-ɪŋ* is the most accurate notation if the *ə* is omitted, § 149.

258. 9. *hɪj wɪl*: the colloquial form *hɪj l* would sound incongruous here, § 250. This applies also to *wɪl* for *l*, 259. 11.

259. 15. *todz* is the older pronunciation.

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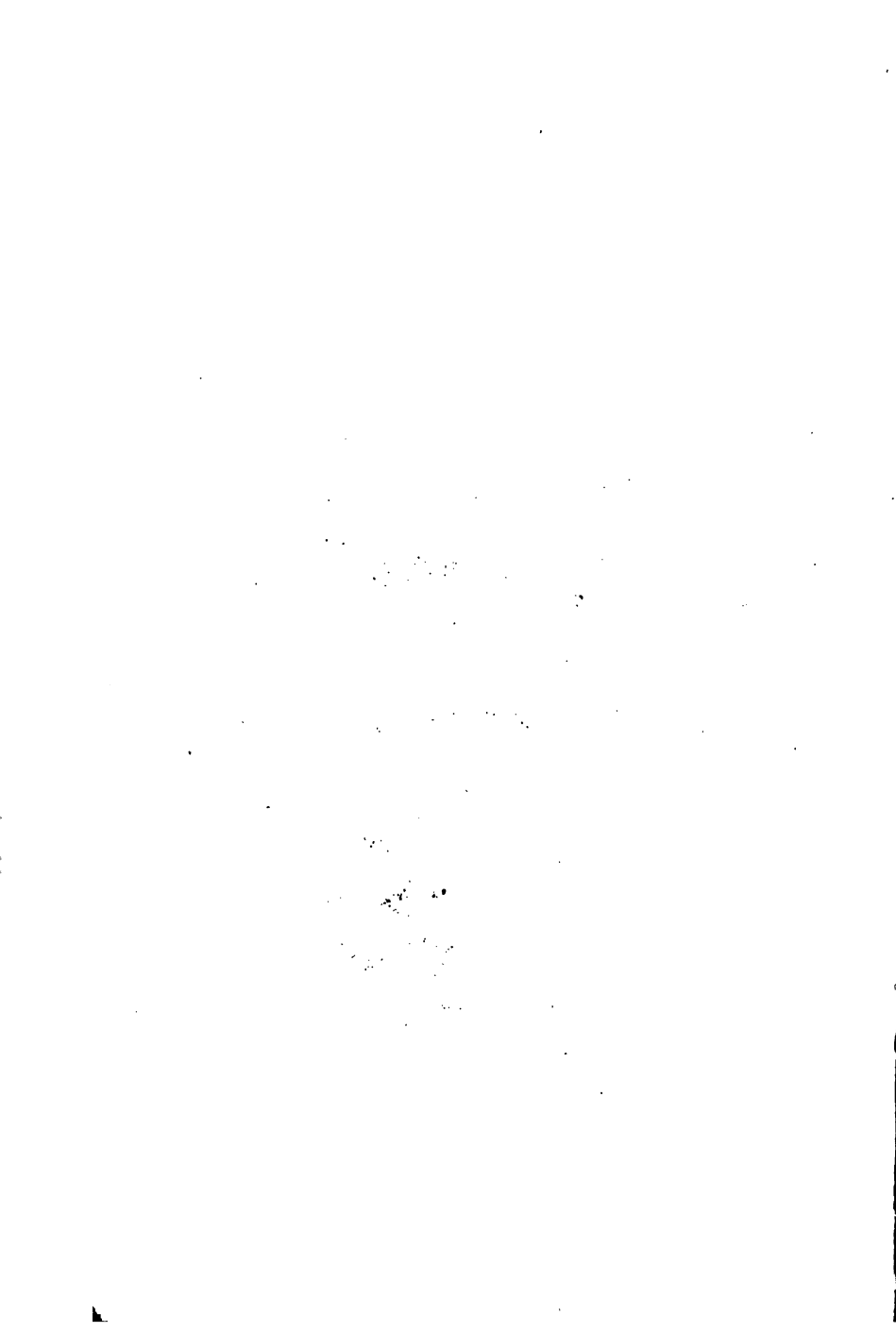
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